Volume XXXV.
Number 1.

APRIL, 1908.

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TEXTILE WORLD RECORD

Special Features

Wider Markets for American Textile Mills

Cotton Mill Organization

Hand Dressing

Designs for Fancy Knitting

LORD & NAGLE COMPANY, BOSTON, MASS.

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The Textile-Finishing Machinery Co.

HOWARD BUILDING

STAIRWAYS, 83 EXCHANGE PLACE [ENTRANCES] ELEVATOR, 171 WESTMINSTER ST.

PROVIDENCE, R. I.

Singeing Machines,

Boiling Kiers,

Washers, Squeezers,

Chemic and Sour

Rusden Patent

Continuous Chainless

Steamer,

Aniline Agers,

Dyeing Machines,

Open Soapers,

Blanket Washers,

Color Kettles,

Horizontal or Vertical Drying Machines, with Copper or Tinned Iron Cylinders,

Automatic Tentering Machines,

Water and Starch Mangles,

Dampening Machines,

Dyeing Machines for Chain Warps.

BUILDERS OF ALL KINDS OF

MACHINERY

FOR

BLEACHING
DYEING
DRYING

AND

FINISHING

Calenders for Rolling, Glazing, Chasing and Embossing, also Calenders for Moire Finish.

Sole Manufacturers of Patented Flexible Cloth Expander for Cylinder Drying Machines, Calenders, Mangles, &c.

Patent Combination Rolls Made of Cotton and Husk, especially adapted for Soft Finish, Unequalled for Elasticity and Durability.

Cotton, Paper, Husk, Chilled Iron, Brass and Rubber Rolls, Electro-deposited Copper Rolls for all Purposes.

Padding and Drying Machines for Shade Cloths.

Single and Double Cylinder Engines.

Hydraulic Presses and Pumps.

Mercerizing Machinery for Piece Goods and Yarn in the Warp or Chain

ALL KINDS OF OUTFITS FOR BLEACHING THREAD AND SOFT TWISTED YARN.
BLEACHING MACHINERY FOR YARNS IN THE WARP OR CHAIN.

Estimates, Drawings and full particulars of complete plants furnished on application

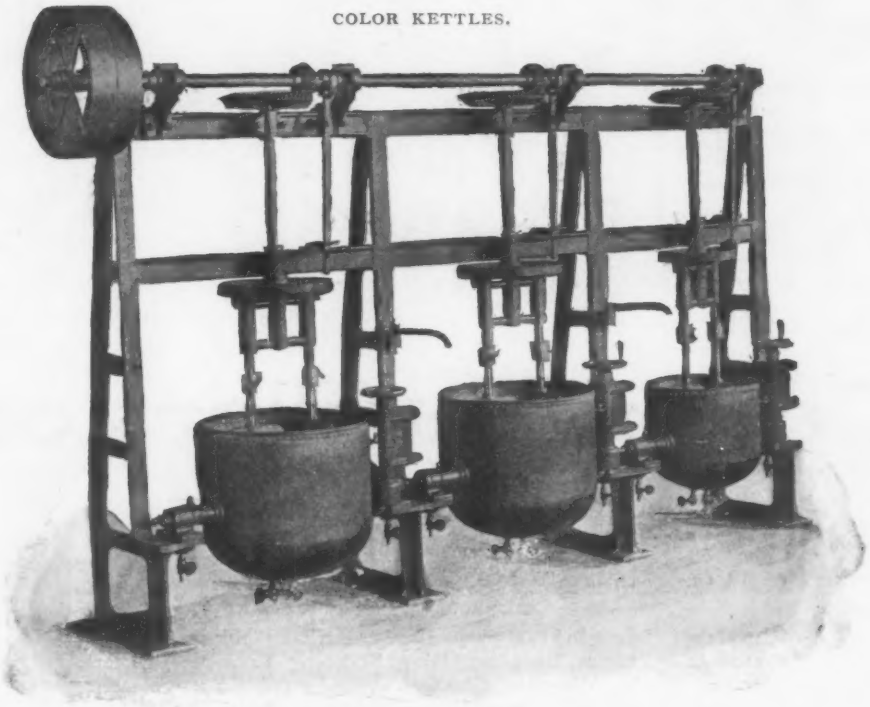
Southern Agent, STUART W. CRAMER, Charlotte, N. C., Equitable Building, Atlanta, Ga.

H. W. BUTTERWORTH & SONS CO.

PHILADELPHIA, PA.

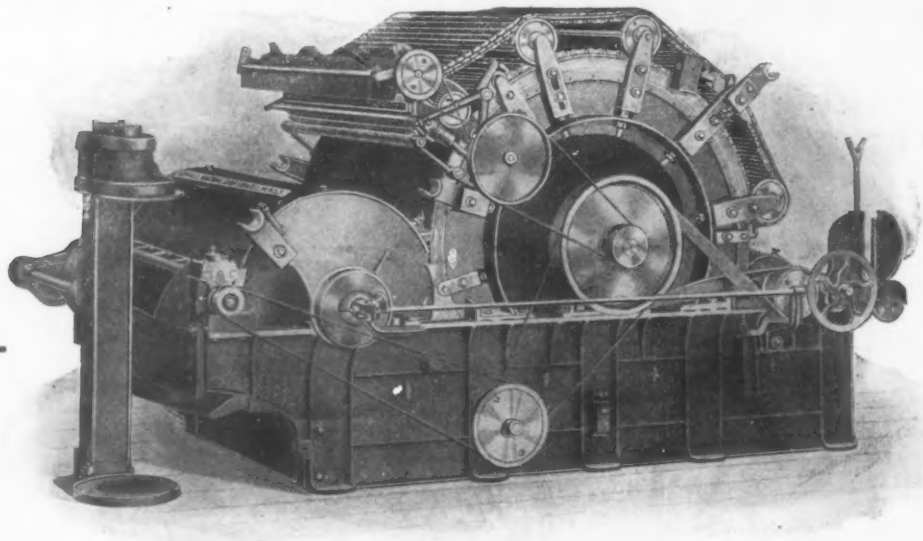
Providence Office, Room 417 Industrial Trust Building.

COLOR KETTLES.



Bleaching, Dyeing, Drying, Finishing, Machinery

for all kinds of textile fabrics.



Cotton and Worsted Machinery

With Modifications to Suit Any Class of Work.

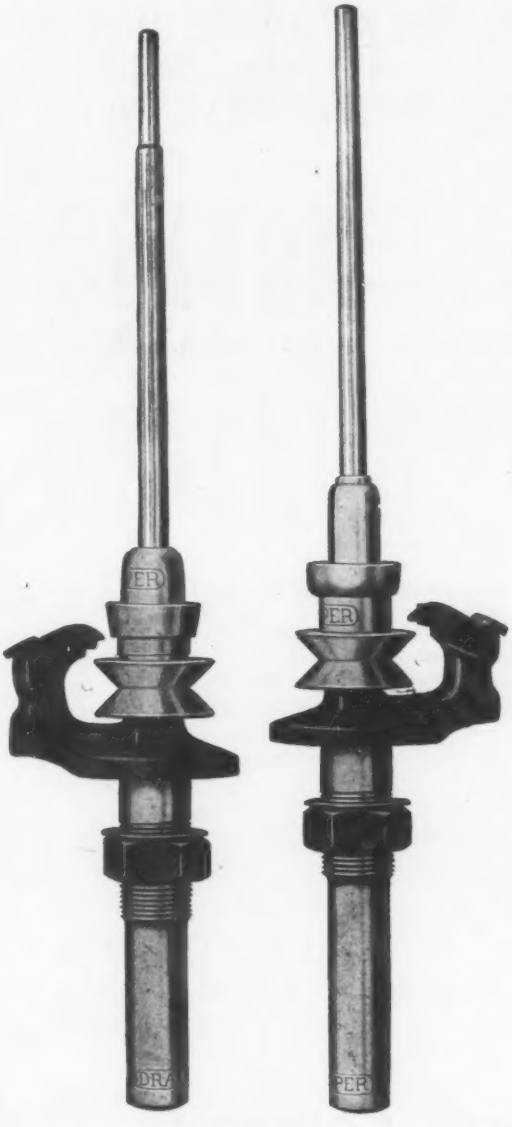
Cotton Machinery: Cards, Railway Heads, Drawing Frames, Fly Frames, Speeders, Ring Spinning Frames, Twisters, Spoolers, Reels, Warpers, Slashers, Winders, Looms, Shearing Machines, Balling Machines, Folders, Stamping Machines, Sewing Machines, Size Pumps, Size Kettles, Drawing-in Frames, Baling Presses, Indigo Grinders.

Worsted Machinery: Spinning Frames with caps, rings or flyers, Dandy Rovers and Reducers, Cone Second Finishers, Reducers and Rovers, Gill Boxes for Drawing, Preparing and Finishing, Weigh Boxes and Drawing Boxes, Cap Trap, Flyer and Ring Twisters.

Plans, Specifications and Estimates furnished upon application.

Lowell Machine Shop

LOWELL, MASS.



Two New
Large Size
Spinning Spindles.

We make

Draper,
Whitin,
McMullan

and other
types of

Spindles;

also

Northrop Looms,

Twisters,
Warpers,
Spoolers,
Reels,

Banding Machines,

etc., etc.

Draper Company,
HOPEDALE,
MASS.

THE EMPHATIC SUCCESS OF OUR "IDEAL" AUTOMATIC LOOM IS DUE TO SEVERAL SALIENT POINTS OF SUPERIORITY OVER ALL COMPETITORS:

1st. The ease and smoothness with which they start up.

2d. The acknowledged superiority of the cloth woven.

3d. Simple and thoroughly mechanical construction, assuring freedom from the constant breakage and expensive repairs attending other automatic looms.

4th. No special bobbins, shuttles or other expensive parts.

5th. Ability to use cop or bobbin filling interchangeably.

6th. Superiority of warp stop motion which does not break or fray the softest yarn.

7th. Of the thousands in operation not a single bobbin or crank shaft broken.

IN PROOF OF CLAIMS WE POINT TO THOSE MILLS FORMERLY USING OUR COMPETITORS' LOOMS THAT ARE NOW USING OURS.

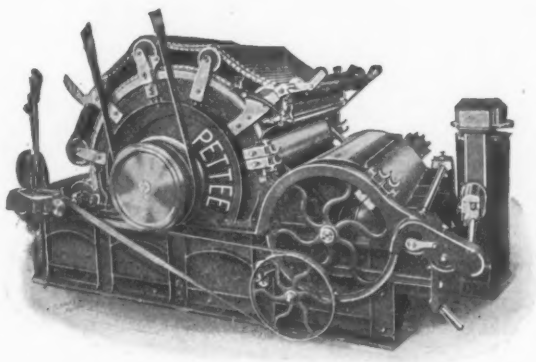
The Stafford Company

Readville, Mass.

Saco and Pettee Machine Shops

NEWTON UPPER FALLS, MASS., U. S. A.

COTTON MACHINERY



Revolving
Flat Cards,
Drawing
Frames,
Railway Heads,
Slubbing,
Intermediate
and
Roving
Frames,
Spinning Frames,
Spoolers
and
Reels.

Shops—

Biddeford, Me.

Newton Upper Falls, Mass.

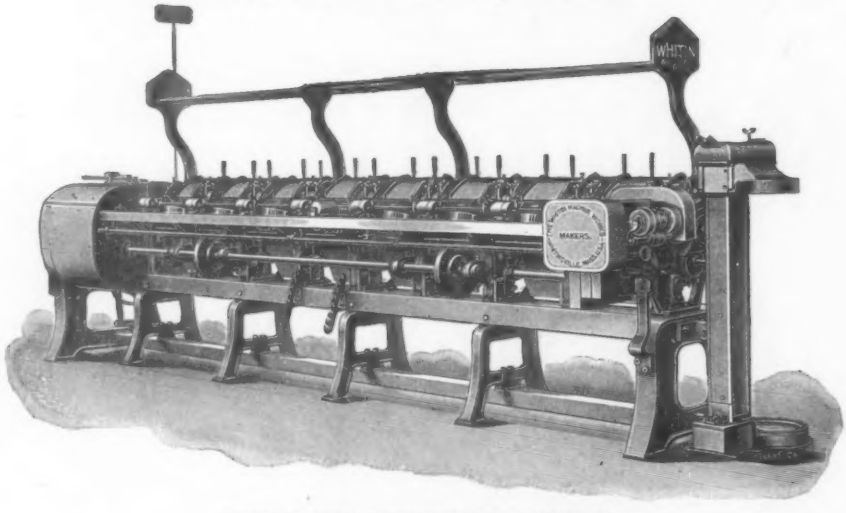
Southern Agent, A. H. WASHBURN, Charlotte, N. C.

THE

WHITIN MACHINE WORKS,

Cotton Machinery

WHITINSVILLE, MASS.



HIGH SPEED COMBER 1906 MODEL.

Revolving Flat Carding Engines,
Sliver Lap Machines,
Ribbon Lap Machines, Combers,
Railway Heads, Drawing Frames,
Spinning Frames, Spoolers, Twisters,
Long Chain Quilling Machines, Reels, Looms.

Southern Agent,
S. W. CRAMER

Trust Building, CHARLOTTE, N. C.
Equitable Building, ATLANTA, GA.

"Kitson Products"

Blowing Systems

For Conveying Bale Cotton
from Storehouse to Picker-room

Self-Feeding Openers
Lappers and
Cleaning Trunks

Waste-Working Machinery

Raw Stock Cotton Dryers

We own the Patterns and can furnish REPAIR PARTS for PICKERS
formerly built by

WHITEHEAD & ATHERTON, . Lowell, Mass.
ATHERTON MACHINE CO., - - Lowell, Mass.
A. T. ATHERTON MACHINE CO., Pawtucket, R. I.

Kitson Machine Shop

Lowell, Mass.

SCOTT & WILLIAMS

2079 E. Cumberland Street, Philadelphia, Pa., U. S. A.

BUILDERS OF

Full Particulars, Samples nnd Special Catalogues on Application.

Rib Knitting Machinery for Underwear and Hosiery

Plain, Single Lever or with Welt, Slack Course and Automatic Slackening Device for Welt.

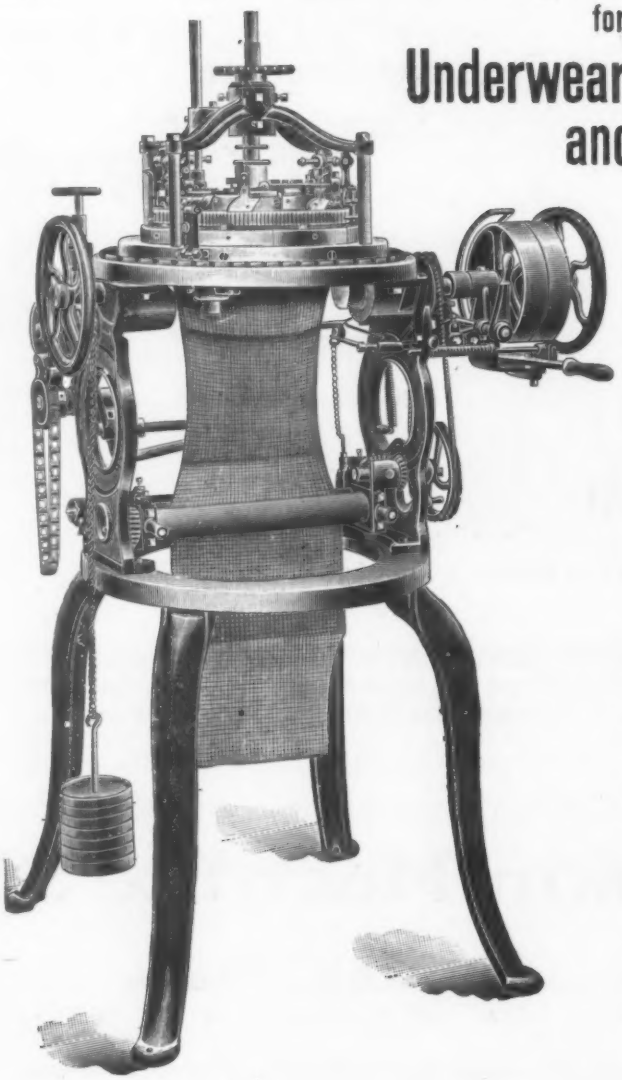
Improved Measuring Device, by actual length knit.

Sizes 8 to 24 inches, inclusive, varying by one inch.

Number of Feeds, 4 to 12, according to style and diameter of machine.

Solid Forged Steel Cylinders, specially hardened or with patent inserted walls for fine fabric.

Special Machinery for Sweaters, etc.



The illustration shows our

Improved High Speed Single Lever Automatic Ribbed Underwear Machine

for making ladies' and gents' ribbed underwear, union suits, etc., plain and shaped.

We build Loopers, Ribbers and other Machinery for Knitting Mills

As well as

A Complete Line of Full Automatic and 7-8 Automatic Seamless Hosiery Machinery.

Spinning Mills able to supply yarn either on cones for knitters or on tubes of various sizes for warps, braiders and twisters, (single end or doubled) are, owing to present market conditions, in a particularly advantageous position. The No. 50 Self Oiling Winder can quickly be adapted to produce all these different packages by means of interchangeable parts which can be carried in stock at small expense. The large electric concerns specify Universal Wind for insulating yarns.

Weaving Mills of first rank have placed their orders for the No. 90 Bobbin Winder. We shall be glad to send you descriptive circular.

Universal Winding Company,
95 South St., BOSTON, Mass., U. S. A.

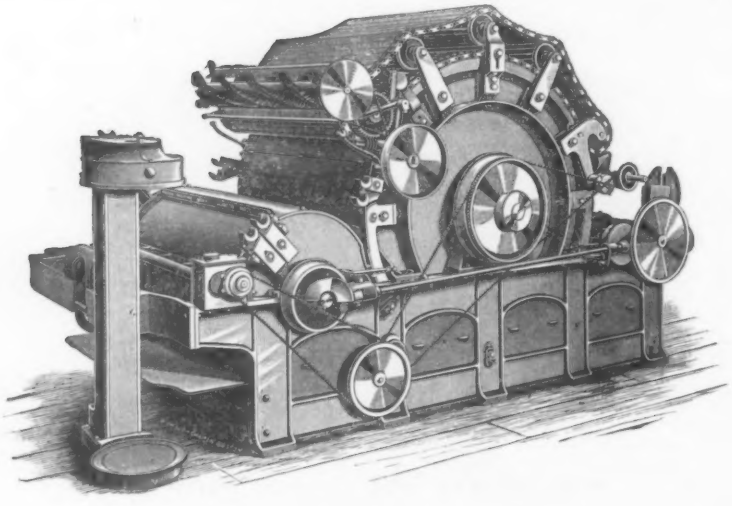
INTERNATIONAL WINDING COMPANY
Saville St., Oxford Road, - - Manchester, England
16 St. Johannvorstadt, - - - Basel, Switzerland

Cotton Machinery

MASON MACHINE WORKS,

TAUNTON, MASS.

Southern Office,
Charlotte,
N. C.



Cards,
Combers, Railway
Heads, Drawing Frames
Spinning Frames, Mules and Looms

INCLUDING

Plain and Fancy Silk Looms

EVAN ARTHUR LEIGH

232 Summer Street (opposite the South Station), Boston, Mass.

SOLE AGENT

IN THE UNITED STATES AND CANADA FOR

Platt Bros. & Co., Ltd.

BY FAR THE LARGEST MAKERS IN THE WORLD OF

Cotton, Woolen and Worsted Machinery

Platt's Patent Opening and Picking Machinery.
Platt's Cotton Comber will comb from 7-8" stock to Sea Islands.
Platt's Special Machinery for Making Cotton Waste into Yarns.
Platt's Special Machinery for Making French Worsted Yarns.
Platt's Woolen and Worsted Carding Engines, Special Designs.
Platt's Cotton, Cotton Waste, Woolen and Worsted Mules.

MATHER & PLATT, LTD.

Dyeing and Finishing Machinery.
Archbutt-Deeley System for purifying and softening water.

TEXTILE MACHINERY ASSOCIATION, LTD.

Flax, Hemp and Jute Machinery.

GEORGE HODGSON, LTD.

Looms for Worsteds, etc.

THE PATENT AUTOMATIC FEEDING MACH. CO., LTD.

Patent Feeding Machines for wool, cotton, flax, fur and fibrous material.

JOSEPH SYKES BROS.,
Card Clothing for Cotton.

JAMES CRITCHLEY & SON'S,
Card Clothing for Woolen and Worsted.

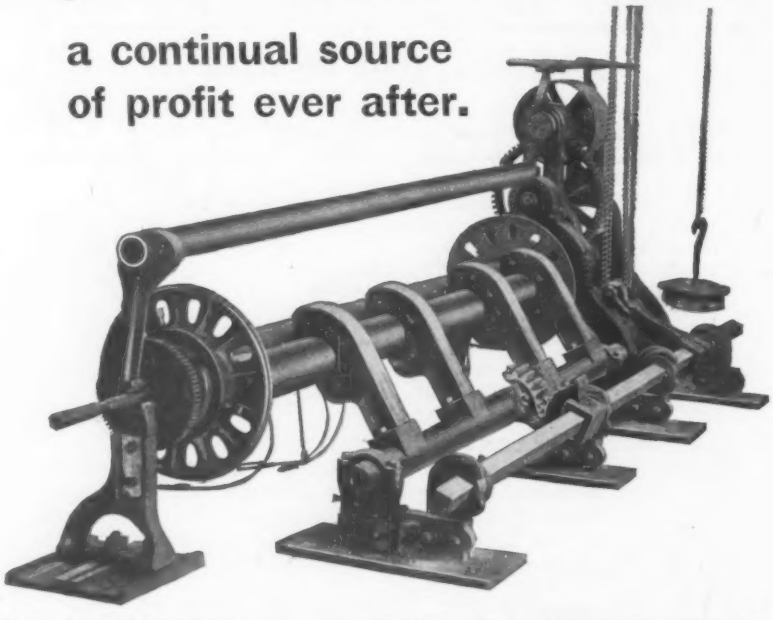
DRONSFIELD BROS'.

Grinding Machinery and Emery Filleting. The Best French and English Combing and Rubbing Aprons. Harding's Pins and Circles. Varey's Fallers, etc.

Worcester Warp Compressors

Pay for themselves in 100 days—

a continual source of profit ever after.



Can be attached to any make of beamer in woolen, worsted or cotton mills. From 30% to 75% more yarn can be put on a loom beam.

Are adapted for woolen, worsted or cotton warps in all their different phases and conditions, and as the yarn is simply rolled, as it is wound on the beam, this rolling compression cannot injure the finest or tenderest stock. The Compressor operates with a heavy rolling pressure using very little tension on the yarn while beaming, making a round, hard, true warp, retaining all the elasticity in the yarn, making the best possible weaving warp, with clean-cut, snappy patterns and smooth, even face on the finished goods. This applies especially to fine worsteds.

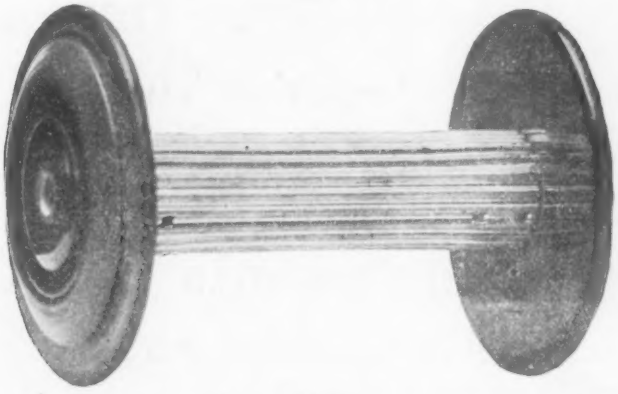
Warps compressed by rolling will weave better —**because they are round**
Take the picks easier —**because they are hard**
Less ends break —**because they are elastic**
Fewer warps to draw-in and hang in the looms
Great saving in waste
More and better production from the looms

Over 2500 compressors in use demonstrates the fact that they are time, money and labor savers.

Worcester Warp Compressing Machine Co., Worcester, Mass.

RHODE ISLAND FIBER SPOOLS

MANUFACTURED BY THE RHODE ISLAND FIBER SPOOL CO., PROVIDENCE, R. I.



These spools, in a modest way, contribute to the successful operation of the modern textile factory. They belong properly among the improved mill machinery and appliances that have reduced manufacturing costs.
They cannot shrink, warp or splinter. They are unequalled for strength and reliability. They cost a trifle more than wood to buy, but are cheaper in the end.

Write for free sample to

SALES AGENTS

CELL DRIER MACHINE CO.
TAUNTON, MASS.
GREENSBORO SUPPLY CO.
GREENSBORO, N. C.

TURBINE WATER WHEELS

HUNT-McCORMICK

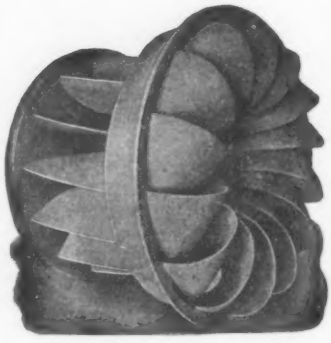
Cylinder or Balance Gate Casing

Least Water,
Greatest Power,
Uniform Speed

Complete Equipments

We make Special Designs to meet TEXTILE MILL conditions.

FLUMES, REGULATORS,
SHAFTING, PULLEYS, GEARS,
CLUTCHES, HANGERS, ETC.
UNDER-WRITER FIRE PUMPS.



Wet Finishing Machinery

Fulling Mills——————Washers
Dyeing and Bleaching Machines
FOR WOVEN AND KNIT GOODS

Dye Tubs—Soap Tanks—Centrifugal Pumps

RODNEY HUNT MACHINE CO.

Branch Office: 70 Kilby St., Boston. Works: Orange, Mass.

JAMES HUNTER MACHINE CO.

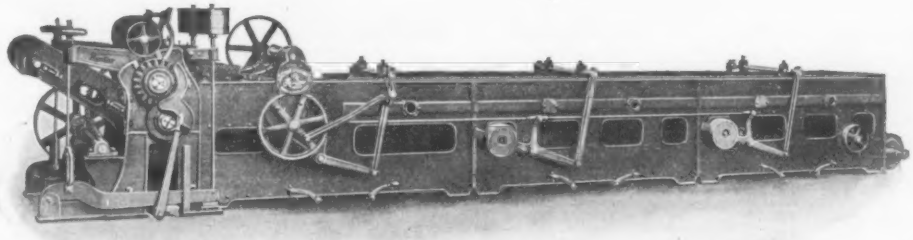
NORTH ADAMS, MASS., U. S. A.

Wool Washers. *Bulletin 54*

The Hunter

MODEL D

WOOL WASHER



Parallel Rake.

Not "A Has Been." Not "A Going To Be"
but a present day success.

Bowls 36" or 48" wide; 16-24-32 and 40 feet long.

Better work and more of it.
Large Settling Bowl giving clean scouring liquor.

Self Contained Flushing Appliance.

Better investigate.

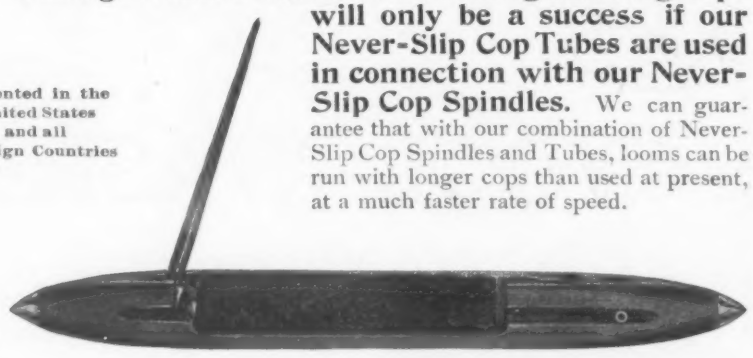
Never-Slip
Cop Spindles and Tubes

Never-Slip Cop Tube

Patent applied for.

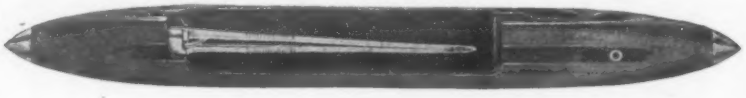
Patented in the United States and all Foreign Countries

Filling-Waste is reduced to nothing and long Cops will only be a success if our Never-Slip Cop Tubes are used in connection with our Never-Slip Cop Spindles. We can guarantee that with our combination of Never-Slip Cop Spindles and Tubes, looms can be run with longer cops than used at present, at a much faster rate of speed.



Shuttle with Spindle Raised

U. S. Patents: 778851, Jan 3, 1905; 790611, May 23, 1905; other patents pending



Shuttle with Spindle Lowered

U. S. Patents: 778851, Jan. 3, 1905; 790611, May 23, 1905; other patents pending

American Textile Specialty Machinery Co.

MANUFACTURERS OF

Shuttles and Shuttle Irons for all Textile Purposes.

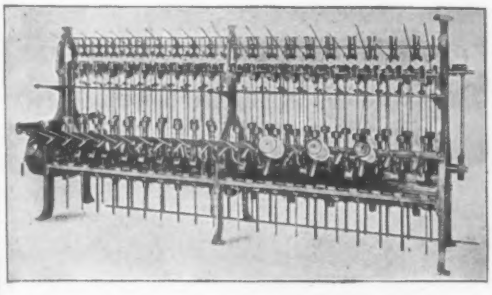
New York Office, 363-373 Rider Ave. **670 Eddy St., Providence, R. I.**

OSWALD LEVER CO.

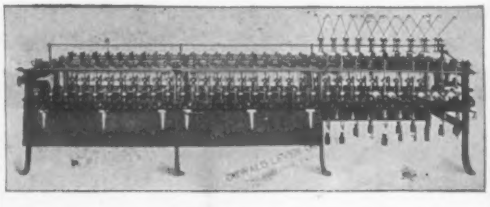
(Formerly LEVER & GRUNDY.)

MANUFACTURERS OF TEXTILE MACHINERY AND SOLE MAKERS OF OUR PATENTED SPECIALTIES IN THE UNITED STATES.

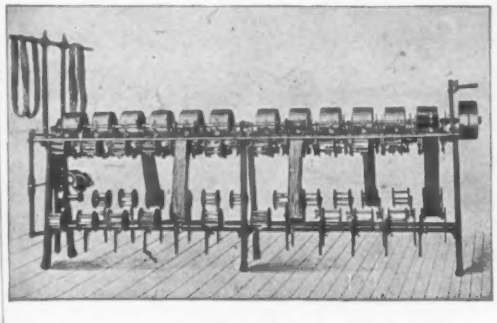
Conical and Parallel Tube Winding Machines; Warping Machines and Creels; Brass Bobbin Winding and other Machinery for lace mills; Chenille Cutting Machines, Sectional Warping Mills, Beaming Machines, etc.



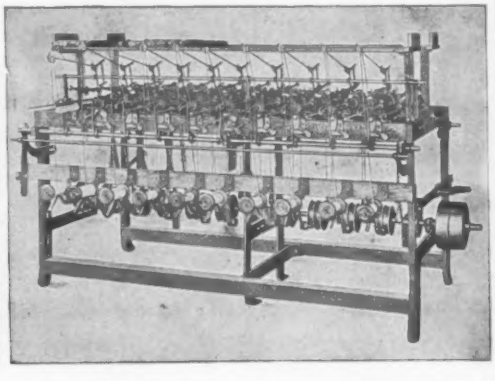
Vertical Spindle Gear Driven Winder, as used by all manufacturers of heavy duck, jute, cotton bagging and carpets.



Silk Winder to wind on Quills, Paper Tubes or Butts. The finest of cotton or silk.



Pressure Drum Spooling Machine. This machine is adapted for spooling any kind of yarn, whether from mule cops or skeins.

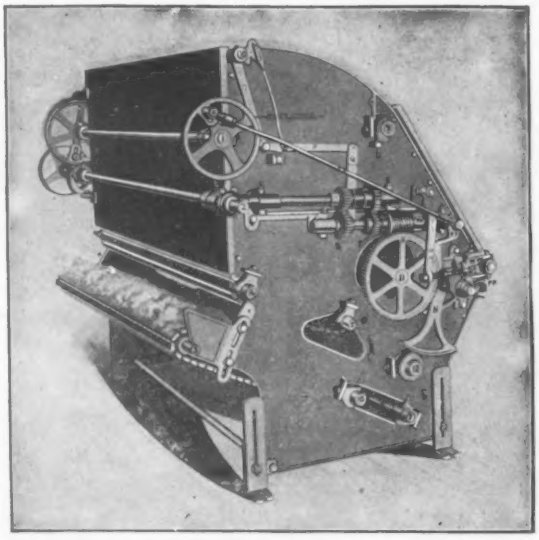


This Machine may be arranged to wind from skeins, spools, cones, or any kind of spinning bobbins. Most suitable machine for cotton or woolen blankets.

Cop Winding Machines for butts to weave from outside; Filling Bobbin or Quill Winding Machines; Vertical Spindle Spooling Machines for Silk, fine cotton, wool and worsted; Variable Speed Bobbin Machines for large bobbins used in knitting mills; Dresser Spooling Machines; Reeling Machines.

Lehigh Ave. and Mascher Sts., PHILADELPHIA, PA., U. S. A.

THE FISHER PATENT CARD FEED



Write Us For List of Mills Where Machines Are Used.

Woonsocket Machine and Press Company

WOONSOCKET, R. I.

PRACTICAL FIRE PROTECTION

If you want your mill buildings properly protected against the fire hazard, thereby obtaining the lowest insurance rates, you must have a supply of water which is instantly available under high pressure and absolutely independent of the successful or immediate operation of pumps or other machinery. The old method of storing such a supply was by wood tanks, generally built on top of buildings. As these tanks are short lived they soon become, themselves, a menace to the building instead of a protector. The sudden bursting of such a tank has often done as much damage as a fire. The up-to-date method of storing water is by means of a steel tank on a steel tower. We make a specialty of the design, manufacture and erection of these tanks of any desired capacity, in any part of the country, to meet any local conditions. Our tanks are recommended by the Factory Mutual Insurance Companies and endorsed by all of our past customers. We have built about seven hundred towers and tanks in all parts of the country, about 50 of which have been erected for Textile Mills. Every one of these is giving satisfaction. Write for booklet No. 7 which gives a list of all our customers with whom we invite you to correspond. The cut shows a tank which we built for the Belton Cotton Mills, at Belton, S. C. The large tank is kept full at all times for fire protection; the small one supplies water for use in the buildings.

Chicago Bridge and Iron Works

105th and Troop Sts. Chicago, Ill.

Why not counteract the natural conditions in the spinning and weaving rooms by installing

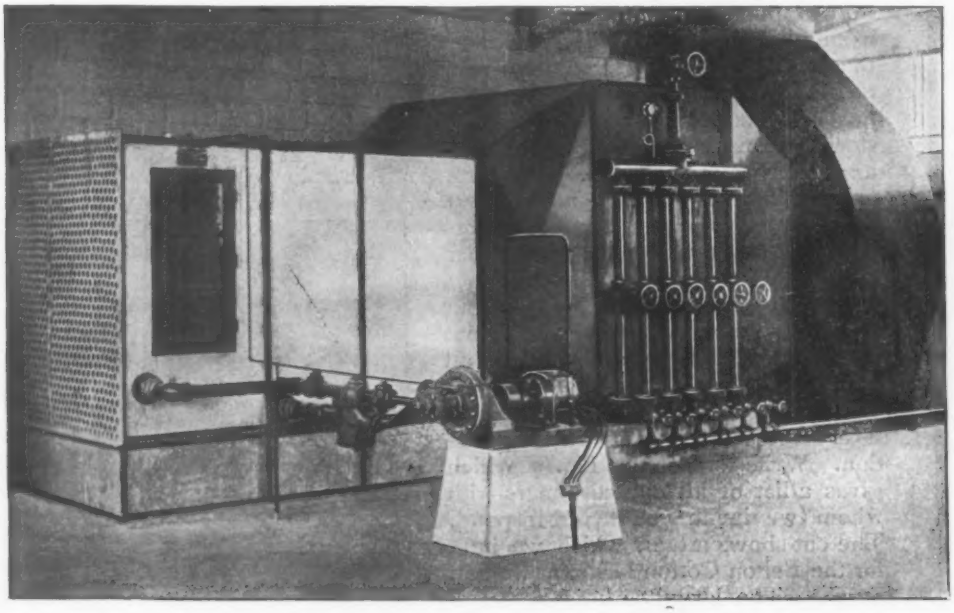
The Buffalo System

of

HUMIDIFYING

Especially adapted to Textile Mills under all conditions of weather

COMPACT TO INSTALL



Write for Catalog 97 T. W., which illustrates and explains fully this distinct departure from other types of humidifiers.

Buffalo Forge Co.,

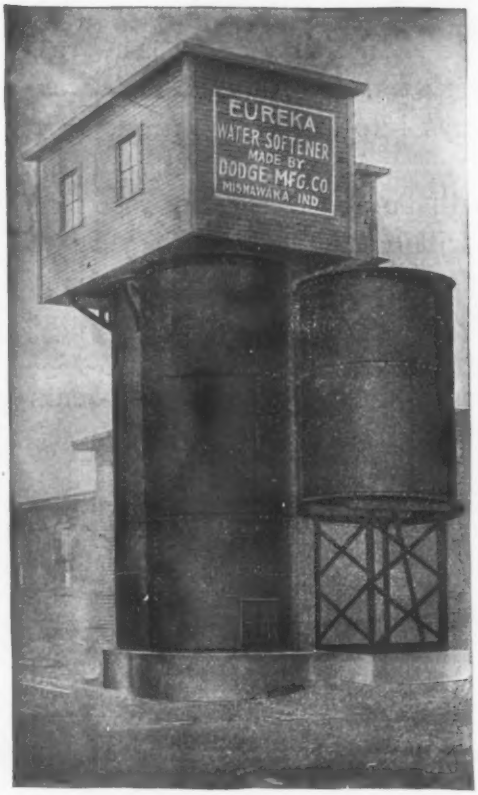
Buffalo, N. Y.

Pure—Clear—Soft—Water

IS WHAT YOU NEED FOR

WASHING, SCOURING, BLEACHING, RINSING,
DYEING, FINISHING, LAUNDERING AND FOR

BOILER FEEDING



"Eureka" System at Des Moines (Ia.) Hosiery Mills.

It *increases* the Standard of your Product, and

Decreases your cost of manufacture.

It *economizes* in dyes, soap, alkali, repairs to boilers and in fuel consumption.

The Eureka Water Softening and Purifying System

Insures a Continuous, Uniform Water for all purposes, regardless of variations in the initial supply, be it stream, pond, lake or well.

The Investment

is reasonable, and cost of operation insignificant.

This System pays large dividends to the owner and carries the *DODGE* stamp of mechanical perfection

Our Red Book No. 3 contains full information, and is sent on request to all who are interested.

Dodge Manufacturing Company
Water Softener Dept. Mishawaka, Indiana

Royalty

A share of the product or profit reserved by the owner for permitting another to use the property, or a percentage paid to the owner of an article by one who hires the use of it.

These definitions of the word "royalty" show exactly the position of the holders of the bonds issued by the **Cross Creek Coal Company** and every ton of coal that the **Cross Creek Coal Company** load, pays into a sinking fund, as a royalty to the bond holders, 10c. As the capacity of the first works on the property will be approximately 2000 tons a day, it means that $40,000 will be available each year to pay on the bonds. As it is the intention of the company to build five such works, it will require but a short time to pay off the bonds, the total issue being but $250,000. From the books of a concern operating in the same seam of coal adjoining us, we find that the

Average selling price is - - -	**$1.97**
Cost of production - - -	**.95**
Net profit per ton - - -	**$1.02**

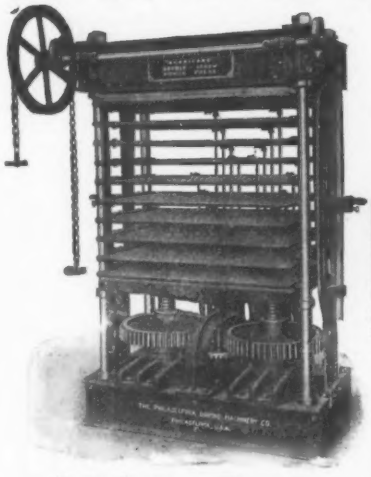
It will pay the conservative investor to write the

Cross Creek Coal Company,

609 Mutual Life Bldg., Buffalo, N. Y.

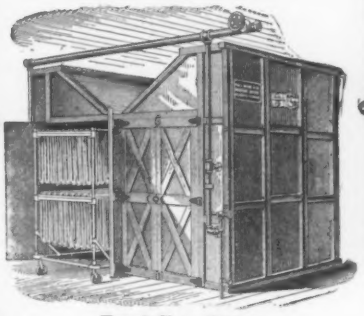
The bonds pay 6% interest, payable semi-annually, and subject to prior sale, a bonus of preferred stock goes with the bonds.

"HURRICANE" DRYERS AND FANS



Power Screw Hydraulic and Lever **Presses**

For Wool, Cotton Stock, Yarn, Stockings, Underwear, Etc.



Truck Yarn Dryer.

BELT DRIVEN AND MOTOR DRIVEN

"Hurricane" Fan, Style No. 2. Write for Catalogues.

COMPLETE EQUIPMENTS FOR DYEING, SCOURING, BLEACHING, CARBONIZING, OXIDIZING, CHROMING, Etc.

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Soft Water for Textile Purposes.

The advantages to be derived from the use of a

Bartlett Water Softener

in textile mills are described in our new catalogue.

Send for copy.

Northern Water Softener Company

Madison, Wisconsin.

The QUALITY of the goods, as well as QUANTITY, is determined by the methods of manufacture.

THE MILL EQUIPPED WITH

"The Reeves" Variable Speed Transmission

for regulating the speed of the tenters, dryers, mangles, printing, bleaching, dyeing and mercerizing machines, etc., produces the best and the most at the lowest cost, because it gives the ***exact speed*** best suited to the work.

ASK THOSE USING IT.

REEVES PULLEY COMPANY,

Columbus, Indiana.

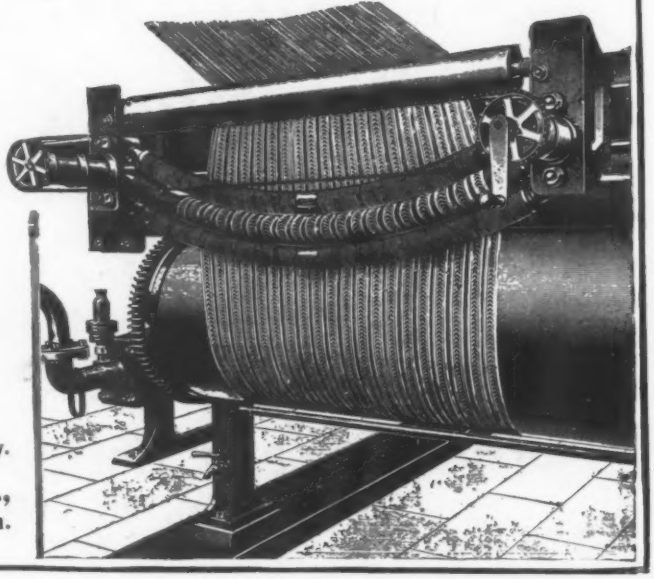
New England Agents,
Cell Drier Machine Company,
Taunton, Mass.

New York Representatives,
Patterson, Gottfried & Hunter,
146-150 Centre Street.

Perfectly Even Tension Both Ways

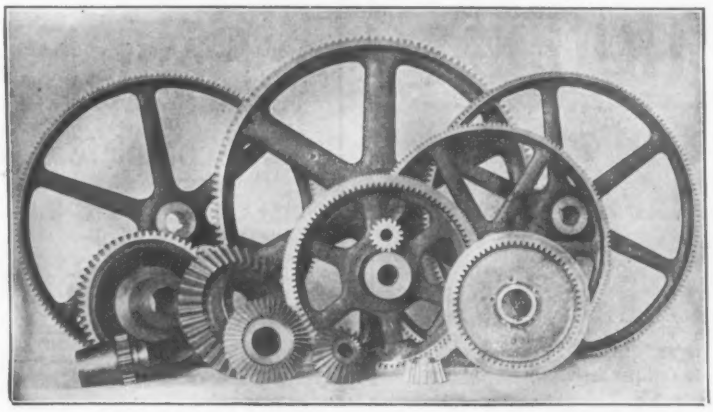
THIS ideal cloth expander gets the full width of the goods in a most satisfactory way. Can be attached to calenders or cans. Hundreds in use in Great Britain and on the Continent—hundreds more in the United States, with constant satisfaction.

Manufacturers unsolicited say to us, "You have the greatest thing in a spreader ever brought to our attention."



We put them in on trial.
Test it on your own work—'t will pay.

Thomas Leyland & Co.,
60 India St., - - - Boston.



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We make accurate gears in Spurs, Bevels, Internals, Spirals and Worms. Can furnish Cast Iron, Bronze, Steel, Fibre or our New Process Noiseless Gears. Let us estimate on your requirements.

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Hope Foundry, LEEDS, England

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Flax, Hemp, Tow and Jute

Special Machinery for the Manufacture of Twines, Rope Yarns and Binder Twine

Good's Combined Hackling and Spreading Machine.

Long Reach Screw-Gill Drawing Frames. Chain-Gill Drawing Frames with Apron Heads.

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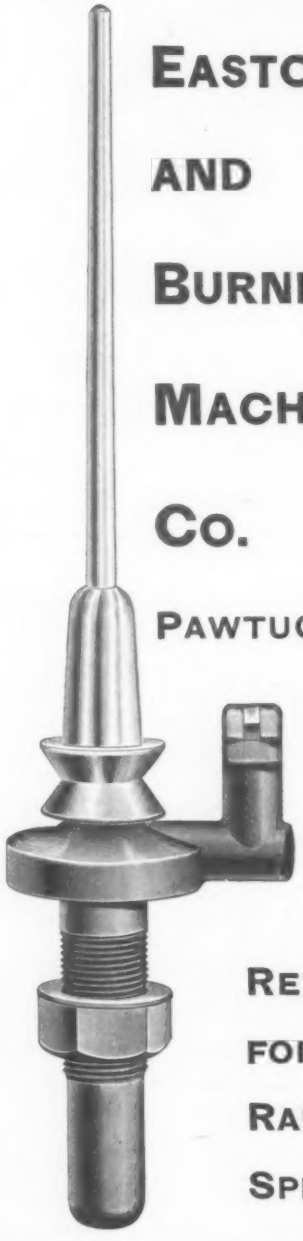
Brownell's Patent Twisting and Laying Machines for Twine.

N. B.—Complete Plans and Estimates for Flax, Tow, Hemp and Jute Mills, Trawl Twine Factories and Steam Ropeworks.

SPINDLES



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PAWTUCKET, R. I.

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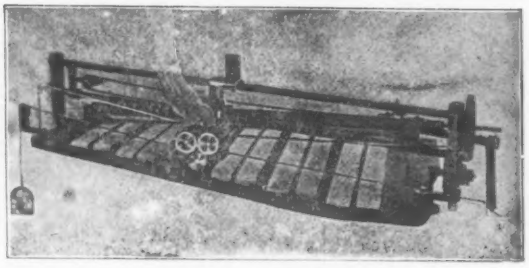
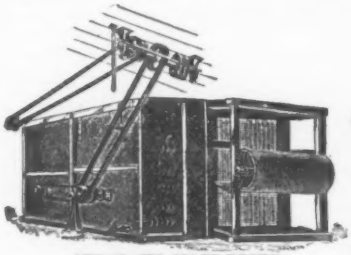
Textile World Record

"20th CENTURY" MACHINERY

Dryers for Wool and Cotton Stock, Yarn, Stockings and Underwear. Carbonizers, Ventilating Fans, Yarn and Wool Scouring Machines, Cloth Washing and Dyeing Machines, Tom Toms, Chroming Oxidizing Machines.



WEB FEED.



AUTOMATIC STOCK DRYER.

We also manufacture Kershaw's Geared Traveler and Improved Web Feed.

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We Recloth or furnish New Metallic Toothed Cylinders and Feed Rolls.

AMERICAN DRYING MACHINERY CO.,

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B V C
TRADE MARK

WHAT THEY SAY ABOUT THEM AFTER SIX MONTHS' USE

"Your machines have done better than you claim for them."

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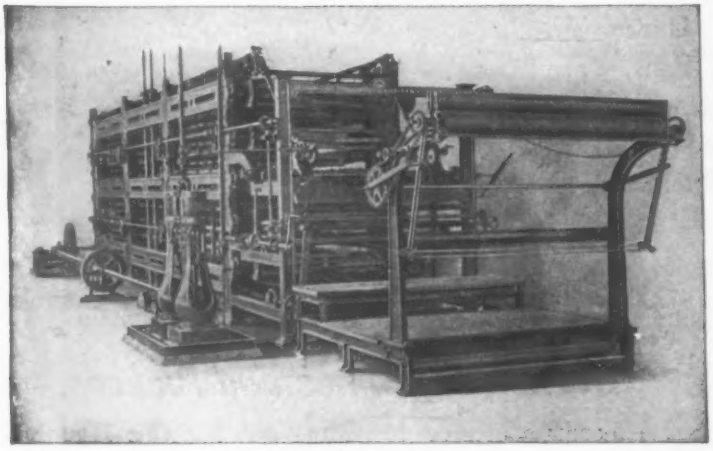
WITH LOW DOWN FEED. PATENTED FEBRUARY 26, 1895.



Tentering and Drying Machines on Pipe System. Special Dryers for Heavy Felt Goods. Hot Air Drying and Tentering Machines.

Fulling Mills, Washers, Chinchilla and Whitney Machines, Whipping Machines, Cone Willows, Marsden & Blamire Lap Feed, Dyeing Machines for Piece Goods, Soaping Machines, Wringing Machines, Jigs (Double or Single), Dewing Machines, etc. Crabbing Machines for worsted. Made either single, double or triple.

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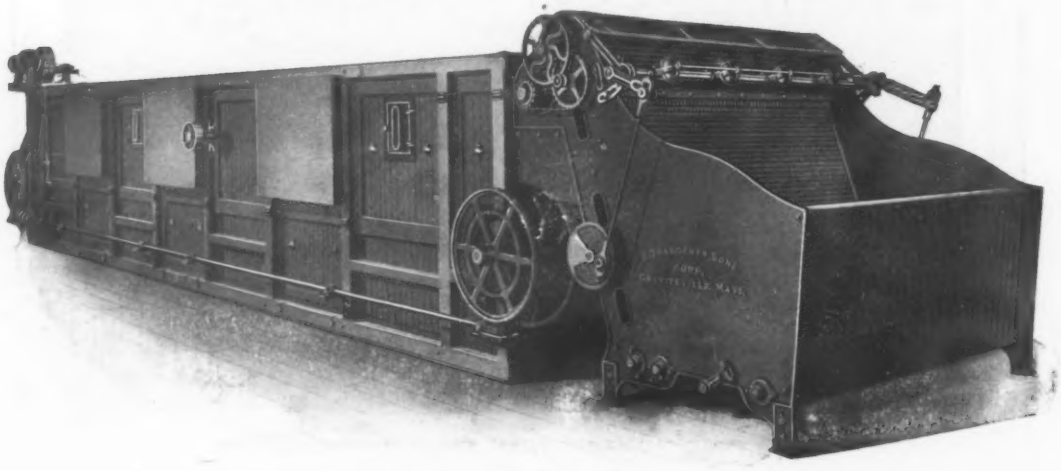

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OF EVERY DESCRIPTION FOR COTTON, WOOLEN AND WORSTED.

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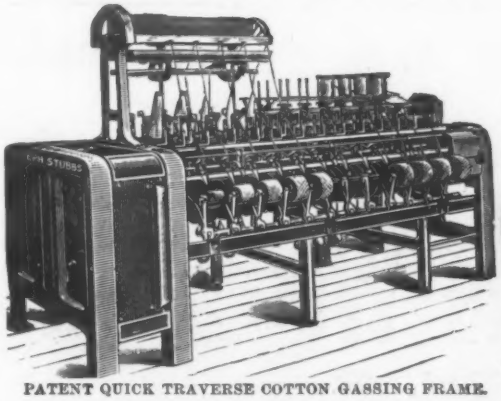
COTTON CORD AND VELVET CUTTING MACHINE CO., Corduroy Cutting Machines, etc.

PICK GLASSES, LEATHER APRONS, PATENT WIRE CHAIN APRONS.

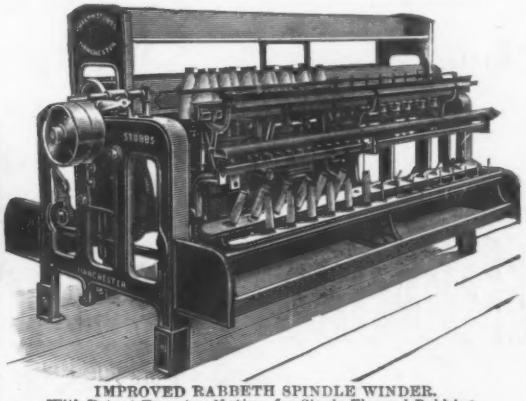
JOSEPH STUBBS - - Manchester, England.

SPECIAL MACHINERY

For Winding, Gassing, Reeling, Preparing, Polishing and Bundling Yarns.



PATENT QUICK TRAVERSE COTTON GASSING FRAME.



IMPROVED RABBETH SPINDLE WINDER.
With Patent Tapering Motion, for Single Flanged Bobbins.

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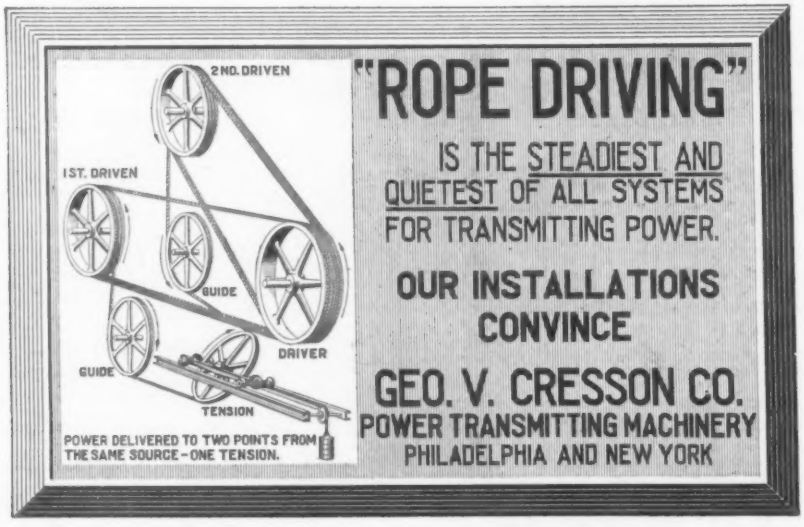

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Cloth Washers, Dye Tubs, Vats, Fulling Mills,
Piece Dyeing Machines, Special Machinery,
Brass Founders, Tanks, To Order.

Hopkins Machine Works, Inc.

BRIDGETON, R. I.

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Spindles and Flyers, for Cotton, Wool, Silk, Flax, etc.

Send for our latest Catalogue and Price List

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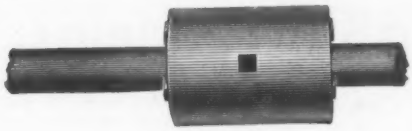

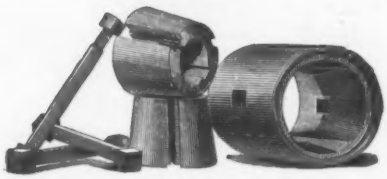

THE "SELLERS" MAKE OF

DOUBLE CONE VISE COUPLING

has a way of holding shafts together, that no other COUPLING can equal.

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Makers of

SHAFTS,
COUPLINGS,
PULLEYS,
HANGERS,

and all most approved appliances for the Transmission of Power.

SEND FOR CATALOGUE AND PRICE LIST.

MACHINE TOOLS.
INJECTORS. POWER CRANES.

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Continuous Daylight for Your Mills

is obtainable by the use of

General Electric Arc Lamps with Concentric Diffusers

This system is best because it is the only mill lighting system that gives a perfectly distributed light that is Similar to Daylight.

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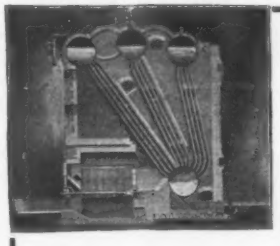
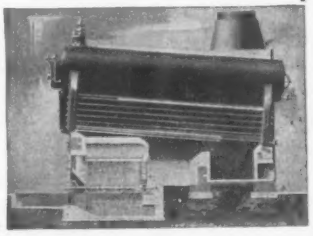
NEW YORK OFFICE, 44 Broad Street.
BALTIMORE OFFICE, Continental Trust Bldg.
PHILADELPHIA OFFICE, Witherspoon Bldg.
ATLANTA OFFICE, Empire Building.
1623



The Murphy Automatic Smokeless Furnace

Burns Slack with Great Economy

The Murphy can be installed under any type of fire-tube or water-tube boiler and to units of any size.



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MURPHY IRON WORKS

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WILSON & CO., BARNSLEY, Limited

Absolutely secure combination of Shield and Bobbin guaranteed.

Loose Shields Impossible.

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Specialties: PATENT "LOCKFAST" and "CLIMAX" Shields. ENAMELLED CONDITIONING BOBBINS, Impervious to Steam, Moisture or Oil.

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Samples and Prices on Application.

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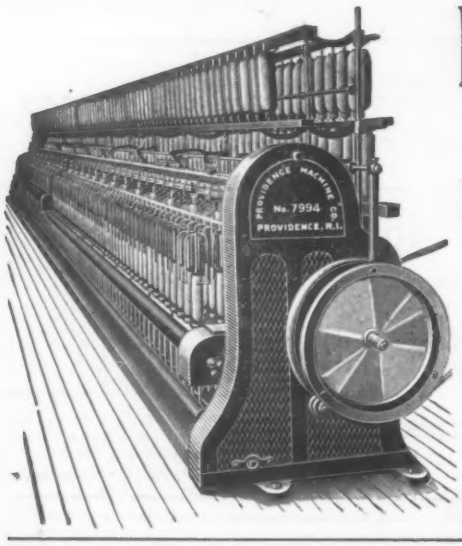

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Manufacturers of

Improved Cotton Roving Frames

Improved Worsted Roving Frames

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The "BODDEN" Flyer

For QUALITY OF FINISH
For QUANTITY of PRODUCTION
HAS STOOD THE TEST OF YEARS

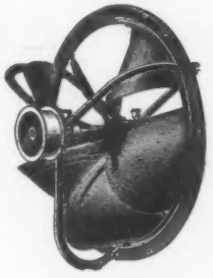
Sole Agents for U. S. A.

Thomas Mayor & Son, Olney Street, Providence, R. I.

When you want to get results— get a Berry Wheel.

Unsurpassed for extracting moisture from all kinds of textiles. Don't let the dollars get away by using more expensive and less efficient methods. Get particulars of the Berry Wheel way of drying textiles. *'Twill pay.*

This is our Berry Wheel, the most effective agent for moving air, eliminating steam and other impurities in the atmosphere.



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Established 1841.

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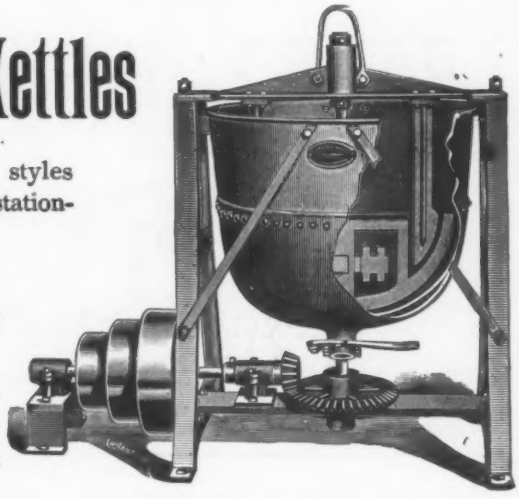
This cut represents one of our many styles of steam mixing kettles, made with stationary and removable stirrers.



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Bleaching and Napping Machinery

Hydro-Extractors, Exhaust Fans, Dye Tanks and Tubs.

Adjusts itself to an uneven load, runs without vibration. Unusual capacity for high-class work.

Send for Catalog.

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Fulton St. and 6th Ave.,
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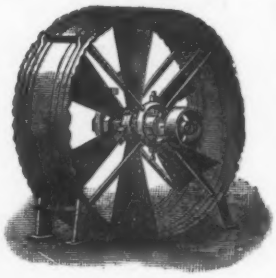

Moves more air than any other fan made. Very efficient under widely varying conditions. Noiseless and does not obstruct the light.

SALEM ELEVATOR WORKS

SALEM, MASS.

ELEVATORS

ESPECIALLY ADAPTED FOR MILL USE.

SEND FOR ILLUSTRATED CATALOGUE AND ESTIMATE.

Our latest Vacuum Dyeing Machine

WRITE US FOR PARTICULARS

For Raw Stock, Cotton and Wool Dyeing.

The only perfect machine for Sulphur Black Dyeing.

Special Advantages

Condition of Stock,
Durability,
Production,
Labor Saving.

WORKS, CHATTANOOGA, TENN.
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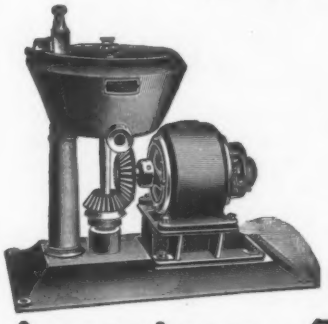
59 AND 61 PEARL ST., NEW YORK.

ELECTRICALLY DRIVEN

CENTRIFUGAL

Oil Separator



MOTOR WOUND FOR ANY VOLTAGE.

Separates oil from bolts, nuts, and scraps of all kind—oil that would otherwise be wasted, and makes it as good as it ever was, for further use. **Send for Catalogue.**

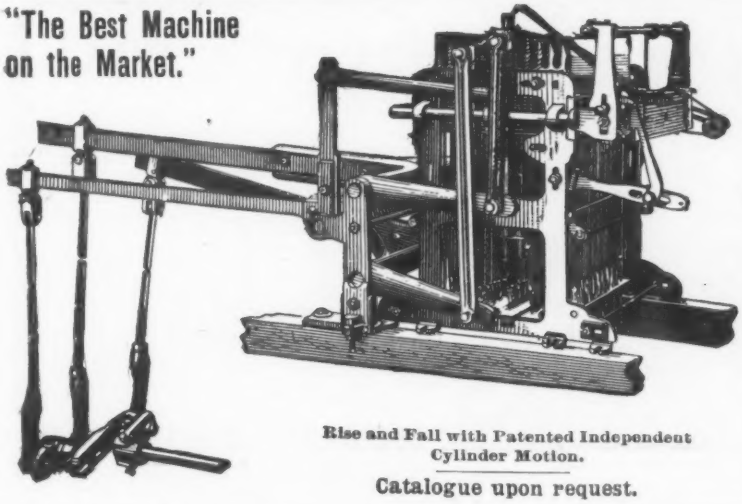
MANUFACTURED BY THE

American Tool & Machine Co.,

109 Beach Street, Boston, Mass.

Incorporated 1864. Founded 1845.

"The Best Machine on the Market."



Rise and Fall with Patented Independent Cylinder Motion.

Catalogue upon request.

USE THE

HALTON JACQUARD

Original Fine Index Machines

Single Lift, Double Lift, Double Cylinder, Rise and Fall, Crossborder,

THOMAS HALTON'S SONS,

Allegheny Avenue and C Street,

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Representative
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LANE CANVAS STEAMING BASKET

Made oblong, round or square to fit any size box. Especially desirable for this use because materials and construction are such as to withstand moisture and heat.

Sold direct or through principal Supply Houses.

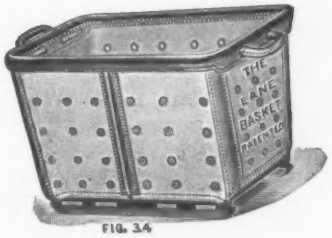

FIG. 34

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are manufactured at our own works from the finest materials with careful laboratory tests. Years of experience and special facilities enable us to produce high qnality goods.

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are made in different grades to meet every textile requirement. Tell us about your goods and we will tell you about the right "Breton." Sold subject to your approval.

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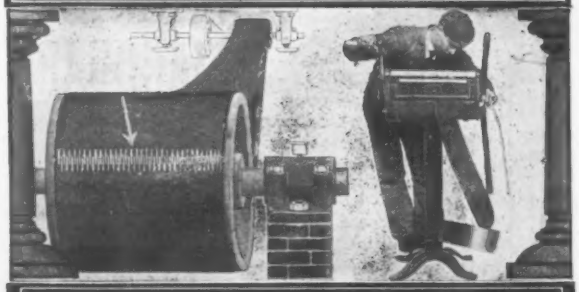

IT'S A JACKSON JOINT

See the Point

of the Arrow? That shows the position of the "Jackson" joint, when in contact with the pulley. If it's a Jackson joint it insures you smooth easy running belts, at a ridiculously low cost.

Illustration on the right shows a

Jackson Belt Lacer

in operation—it is simple efficient, and inexpensive to maintain. Your largest belt can be laced and placed in running order in a few minutes time at a cost of only a few cents—smaller belts even quicker and cheaper. Our booklet will show and convince you.

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Birdsboro, Pa.

Eureka Fire Hose

THE BEST FIRE HOSE MADE.

(Trade Mark.)

For use in

Cotton Mills, Woolen Mills and Factories.

Seamless Woven and Rubber lined EUREKA COTTON HOSE, has no equal. Send for circular and testimonials.

Awarded Gold Medal at the St. Louis Exposition, 1904.

EUREKA FIRE HOSE MFG. CO.
13 Barclay St., New York, N. Y.

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NEW FEATURES: Wearing Parts, Valve and Seat Renewable.

Class A Return Trap

We manufacture Steam Traps for all duties, High and Low Pressures, returning the Condensation back into Boiler or Discharging to Hot Well, Tank, or Atmosphere.

No Elastic Gaskets, all Joints Ground Metal and Metal.

SEND FOR

Catalogues A, B and C

ALBANY STEAM TRAP CO.
ALBANY, N. Y.
Established 1870.
JAMES H. BLESSING, Pres. THOS. F. RYAN, Sect'y & Treas.

WILLIAM FIRTH, Pres. THE FRANK B. COMINS, Vice-Pres. and Treas.

AMERICAN MOISTENING COMPANY

79 Milk Street, Boston, Mass.

Received the HIGHEST AWARD on recommendation of the FRANKLIN INSTITUTE for

"Simplicity and Originality of Design."

Is the largest manufacturer of HUMIDIFIERS in the World. The last twenty years receiving the HIGHEST AWARD in this country and Europe for its AIR-MOISTENING SYSTEM. EIGHT GOLD MEDALS and others.

The Only Perfect System of Air Moistening

Has Been Adopted by the Representative Manufacturers of this Country.

The only System adopted in the Textile Schools. Write for booklet "T" on Humidification.
Legal proceedings will at once be taken against infringers and users of infringements.

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Mill Sewing Machines

No. 9.—Portable Foot-Power Rotary Sewing Machine

It is especially adapted for use in Cotton and Woolen Mills, Bleacheries, Print Works at the Printing Machines, in Dye Works, Cloth Rooms, at the Fulling Mill, Shears, Calendars, Gigs, Drying Machines, etc., or any of the different finishing processes in textile mills.

Manufactured by the

DINSMORE MANUFACTURING CO.

Salem, Mass., U. S. A.

A Measuring Machine

that shows in Yards the output of each machine.

A glance tells how the machines are running —enables you to keep output up and cost down.

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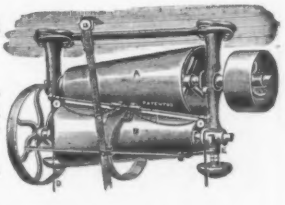
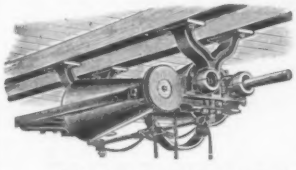
Variable Speed Countershafts

The Evans Friction Cone Pulleys



will drive your machines at any desired speed from 1 to 6 by simply pulling a cord.
They are guaranteed to do your work.



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Over Ten Thousand Sets in Operation in this Country and Europe.
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CONCRETE BLOCKS

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Simpson Brothers, Corporation

19 Federal Street, Room 58 Boston, Mass.

Autogenous Welding

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Ferrofix Brazing Processes

are the methods by which we make

Broken Machinery

as good as new and it costs far less

The *new* methods; Most efficient and best in every way. *All* original strength restored at very low cost and in shortest time.

Shuttle Boxes, Frames, Gears, Racks and all Textile Machine Parts of Steel, Iron Copper, Brass or Aluminum.

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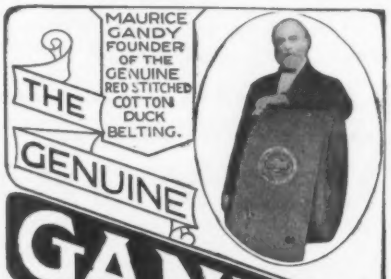

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is a slipping belt so harmful as around the complicated machinery of a textile plant. We realize this fact, and offer in the

Gandy Red Stitched Cotton Duck Belt

one that clings to the pulley like a chain to the sprocket, runs straight and true, lasts long, and instead of costing more than others, cost less. Our free booklet—

"Experiences With Gandy"

tells more about this money saver. Send for it.

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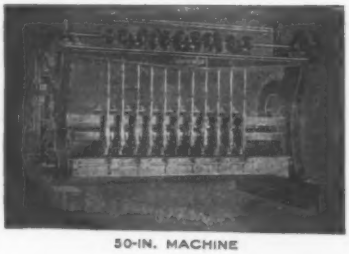

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FOR ALL PURPOSES WHERE A NUMBER OF ROWS OF SEAMS ARE REQUIRED

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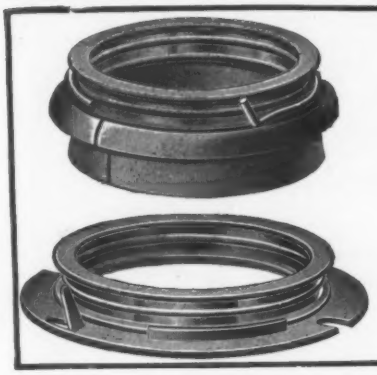

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RING HOLDERS.
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THE ONLY
Seamless Hard Fibre Roving Can.

The highest type of Roving Can ever produced.

Made from Pure Chemical Hard Fibre, without **seams** or **rivets**, absolutely smooth, and of incomparable durability.

Supplied with our Seamless Protection or Kicking Band, with either an electrically welded steel top ring, or a smooth turned fibre top, and with either a wooden or metal bottom secured with a seamless steel bottom ring.

Thousands of these **"No Waste"** Cans now in use and endorsed by the leading and most representative mills in the United States and Canada.

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Cordage Cans	**Comber Boxes**
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Write for prices.

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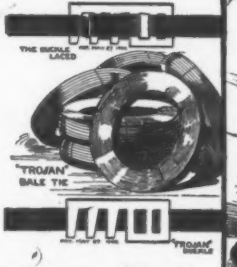
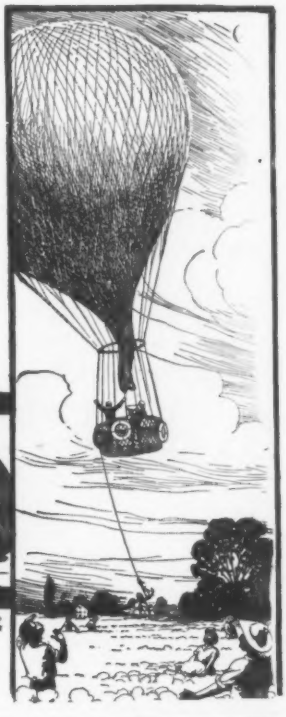
If you are using rope for baling you are helping to pay the gas bill to keep rope prices balloon high.

Rope is up—*Trojan Bale Tie* and *Band* is down.

Trojan Band is made plain or galvanized in coils from 2000 to 3000 feet without a break. Widths ½, ⅝, ¾ and 1 inch.

With the present high prices of rope Trojan Band and Buckle is a **money saver.**





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Our Latest Improved Steel Power Press with New Steel Link Chains

Minnich Baling Press

for all kinds of products.

Must turn out more bales with less labor and power than any press in the market.

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for WOOLENS, WORSTEDS, FELTS, etc.

Built Upright or Horizontal with Low Down Feed

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ALL STYLES AND KINDS FOR FLAT AND ROUND BRAIDS.

SOLID SASH AND CURTAIN CORDS,

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NEVER DISAPPOINT

The best materials and most careful attention to every detail of finishing, combine to make our loom harnesses as good as it is possible for us or anyone else to make. Those who are not familiar with our work will run no risk, but on the contrary find it to their interest to give our harnesses a trial.

Loom Pickers
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There must be reasons why

Your machine or product improves quality, increases production, lessens cost or makes for the betterment of mill conditions — then why not tell the textile buyers the facts. It is *so much easier* to get the order when *the men who buy know them.* Bring this information constantly to their attention through the pages of TEXTILE WORLD RECORD, which reaches 80% of the textile establishments of the United States and Canada. *In no other way can yon reach so many mills at the same cost.*

DEAN BROS. STEAM PUMP WORKS

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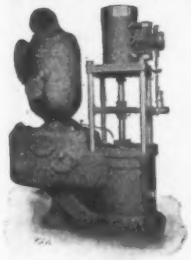
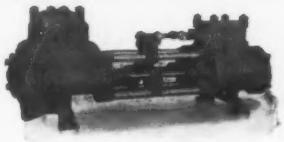
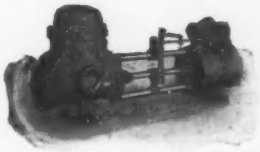


VERTICAL AIR PUMP AND JET CONDENSER



DUPLEX DURABLE PUMP

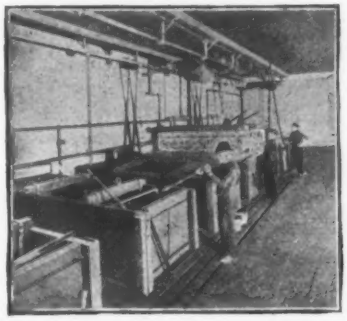


SIMPLE PUMP

TWIN AIR PUMP AND CONDENSER

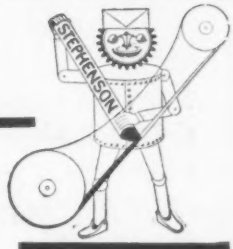
Waters' Dyeing Machine

This cut shows a new and useful machine patented by D. F. Waters for the dyeing of any color on Worsted, Woolen, Cotton and Merino Yarns.



Being successfully operated by some of the largest manufacturers in the country.
The saving of labor will more than pay for a machine in a few months.
Capacity; 2,000 lbs. a day per man.
Machine can be seen in operation at any time at my plant where I have 13 in operation all the time.

D. F. WATERS,
53 and 55 Wister St., GERMANTOWN, PHILADELPHIA, PA.



Took us years to learn
that a Pound STICK of

Stephenson
Bar Belt Dressing

1⅞ inches in diameter is the size that best suits most men. It has just the right "feel" to it in your hands. ¶ Clean to handle; easy to apply (friction on the belt heats it,) always to be relied upon where a belt slips. STEPHENSON Dressing reflects credit on the maker, the seller and the user. Quality dressing for Quality folks. ¶ Your hardware store will sell you as little as a box of a dozen pound sticks, or give you a free sample to test.
In either case look for the Cog Wheel Face.

Red Label for Leather Belts. No ONE kind is good for ALL belts— You know that. **Green Label** for Rubber or Canvas.

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FLOORS, SILLS, JOISTS, TRESTLES, DYE TANKS, VATS
or other Woodwork can be successfully preserved
by applying Avenarius Carbolineum, the
great German Wood Preservative.

Applied with brush or by dipping Always ready for use. On the market since 1875.

TELL US WHERE YOU ARE HAVING TROUBLE AND WE WILL MAKE A RECOMMENDATION.

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15 to 200 H. P.

We are thoroughly familiar with the electric requirements of textile mills.
This is one reason why **C-W** induction motors make good in this field.
Crocker-Wheeler Company, Ampere, N. J.

Individual Electric-Motor Drive is the only method by which to secure *direct and positive power* at a *constant rotative speed,* for the operation of Textile Machinery. When motors are directly applied to machines, the resulting *improved quality* and *increased quantity* of product, as well as the *decreased cost* of operation, are very marked.

Ask Westinghouse Electric.

Westinghouse Electric & Mfg. Co.
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We have the Largest Exclusive Spool Manufacturing Plant in the World with a capacity of 10,000 High Grade Bushed Spools per day.

Our splendid facilities guarantee prompt and immediate deliveries. Our equipment, than which no better exists, guarantees the highest grade of all hard wood spools of the highest quality procurable at medium prices.

COTTON WARPER SPOOLS, COTTON TWISTER SPOOLS, WORSTED ROVE SPOOLS, CARPET CREEL SPOOLS, WORSTED REDUCER SPOOLS, WOOL WARP SPOOLS.

We can give one week deliveries on any order of the above kinds of spools.

Lestershire Spool & Manufacturing Co.,
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To the Manufacturer who Invites Success!

THE HENDERSON CARD

will increase your carding and improve the quality of your yarn with less waste, greater strength and increased production over any other system.

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Successors to the Cleveland Machine Works

Owners and manufacturers of the celebrated **Henderson Card** for Wool, Worsted, Cotton, Waste, Flax and Asbestos. Also manufacturers of

All Kinds of Woolen Machinery.

Don't Disfigure Your Goods with an inferior method of stamping your name and trademark. Kaumagraph stamps give a clear and clean impression and at no appreciable advance in price over other methods. Send for our samples; free on request.

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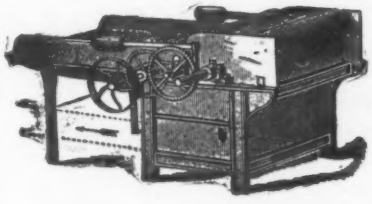

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Wool and Waste Dusters,
Rag Dusters, Nappers.
Improved Cloth Measuring Machines.

Lumper and Duster Cylinders Refilled and Repaired.

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Large lot of Cotton, Woolen and Worsted Machinery of all kinds for sale. Best Prices paid for first-class second-hand machinery.

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Pressure and Gravity Filters
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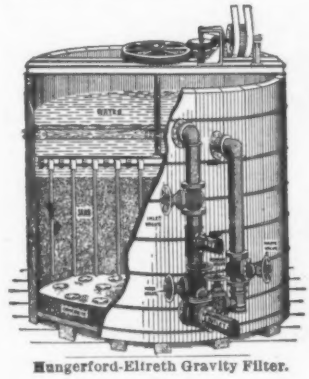

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FILTERS PRESSURE and GRAVITY

WATER SOFTENERS INTERMITTENT and CONTINUOUS

There is only one Filter, the

HUNGERFORD - ELFRETH,

the only filter which exceeds its guarantee.

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Traverse Wheel and Long Roll

Particular Attention Paid to Repairing Grinders of All Kinds and Makes

Southern Agent

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The Metallic Drawing Roll Co.

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MANUFACTURERS OF

Metallic Rolls

Especially adapted for Cotton Mills. 25 to 33 per cent more Production Guaranteed. Weight Reduced 33 to 50 per cent. No Leather Covering Bill.

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Somerville, Mass.

"Coronation"

Piece End Sewing Machines

on English stand sent on trial most anywhere.

Send for Circular.

Bleaching, Dyeing & Finishing Machinery.

Sews any Fabric

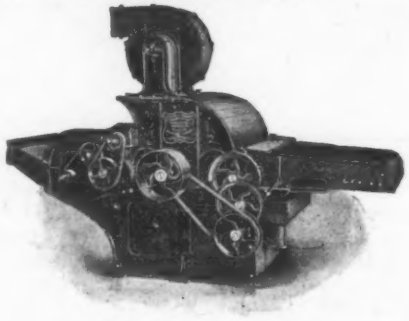
Thick or Thin

Wet or Dry

Without Change

Fine Stitch or Coarse Stitch

CURTIS & MARBLE MCH. CO., WORCESTER, MASS.



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Wool Burring and Picking Machinery.

Cloth Finishing Machinery.

The Vulcan Roving Can prevents broken ends

in roving by its smooth, glossy inside finish and true running on the card table. The body is made of the best chemically treated fiber which has many of the qualities of rawhide. All rivets are burred so they cannot draw out. Rings are made of steel and have rounded edges. Every can is accurate in size and perfectly round. They are built for long continued satisfactory service. Write for prices and list of users.

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MANUFACTURERS OF IMPROVED

TWISTING MACHINERY

OF ALL KINDS

For Laying Line, Twine and Cord of all sizes.

Nichols' Patent Whirligig Twister for Hard Laid Twine.

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Warp Yarn Twisters, Sail Twine Twisters.

Prices and particulars on application.

Soft Water

7,000 gallons per hour Softener installed for American Thread Co.

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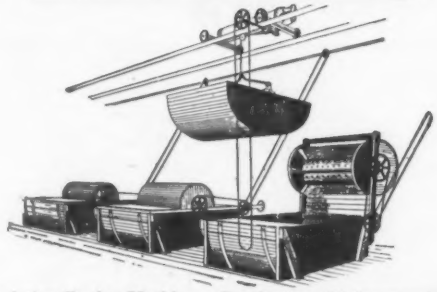
Dyeing Machinery
FOR WARPS AND PIECE GOODS
Bleaching Machines



Circulating Dyeing Machines. For Hosiery, Underwear, Raw Stock and Rags. Singeing Machines for Hosiery. Mercerizing Machines.

1866 1908

HARTFORD STEAM BOILER INSPECTION AND INSURANCE CO. HARTFORD, CONN.

41st Annual Statement
January 1, 1908

Capital, $1,000,000.00
Surplus, 1,006,868.06
Reserves, 2,053,326.74
Assets, 4,060,194.80

The HARTFORD was the Pioneer Company in the field of Steam Boiler Insurance, and it is the only company which makes a specialty of and does exclusively a steam boiler inspection and insurance business.

The HARTFORD is the only company whose entire talent and energies are applied to the study of steam, to the scientific construction and installation of boilers, and to their periodical inspection by expert mechanics.

The HARTFORD is the only company whose entire assets and resources are held exclusively for the protection of steam users, and the payment of losses occasioned by the explosion of steam boilers and for no other hazard whatsoever.

The HARTFORD is now doing nearly nine-tenth of the Inspection and Insurance of Steam Boilers in the New England States, and nearly two-thirds of the entire amount done throughout the United States.

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F. B. Allen, Vice-President.
C. S. Blake, Secretary.
L. F. Middlebrook, Assistant Secretary.
Hartford, Conn.

SAVE MONEY IN BELTING

The real economy or dollars and cents efficiency of well kept belting depends largely upon the lasting qualities, and that is just why Shultz Sable Belts always win out.

By "saving money" we mean that Sable, characterized by its soft surface and rawhide interior, is transmitting power without attention or slip, even when run slack. The kid-like surface does away with tight belts, and makes driving power out of useless journal friction.

Shultz Sable Belts are by far the cheapest in the long run. Try one for 60 days free.

Shultz "Aqua" Belting will stop all troubles on wet or oily drives. Write for sample.

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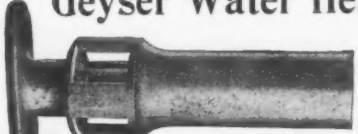
Wholesale Dealers in

Manufacturers' Sewing Machines & Supplies

Union Special and Merrow Machines a Specialty.

532 West Broadway, New York

Geyser Water Heater



U. S. Pat 873,269

To attach to end of steam pipe for heating liquids in tanks or vats. Avoids that disagreeable noise caused by the direct introduction of a steam jet and raises the liquid to the required temperature in about 70% of time required by latter.

By its thorough circulation it distributes an even temperature throughout the tank. Price list upon application.

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TEXTILE MACHINERY CO.

DUNN FLYER

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KILBURN, LINCOLN & CO.,
FALL RIVER, MASS.
MAKERS OF
LOOMS
For PLAIN and FANCY WEAVING.
Represented in the South by
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GEO. H. WOMELSDORF FRANK T. CALDER
Calder Machine Works
Engineers and General Machinists
325 Race St., Philadelphia
We make a specialty of repairing
Spindles and Flyers
Estimates for new work cheerfully given.
Steam and Gas Engines. Electric Motors and Machinery of every description promptly and correctly repaired.

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Worcester, Mass.
Battens and Supplies

Narrow Fabric Looms
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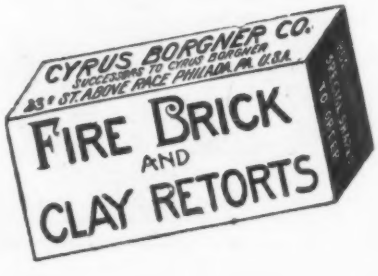
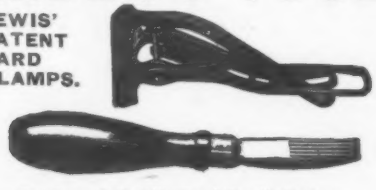
Gilbert Wood Split Pulleys
SAGINAW MANUFACTURING COMPANY,
SAGINAW, MICH., U.S.A.
New York Branch, 88 Warren St.,
Chicago Branch, 28-32 So. Canal St.
Sales Agencies in all the Principal Cities.
Cable Address: Engrave, A B C and Lieber's Codes.



CARDER'S TOOLS
LEWIS' PATENT CARD CLAMPS.



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For setting up Bent Teeth of Card Clothing. Also a variety of other tools used by Carders and Manufacturers.
Send for circular.
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Drives at a Right Angle
without noise, dirt or trouble.

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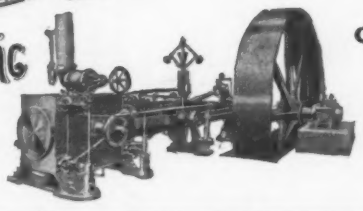

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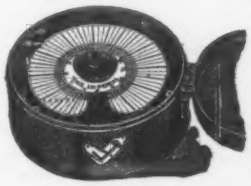

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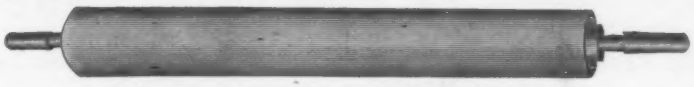

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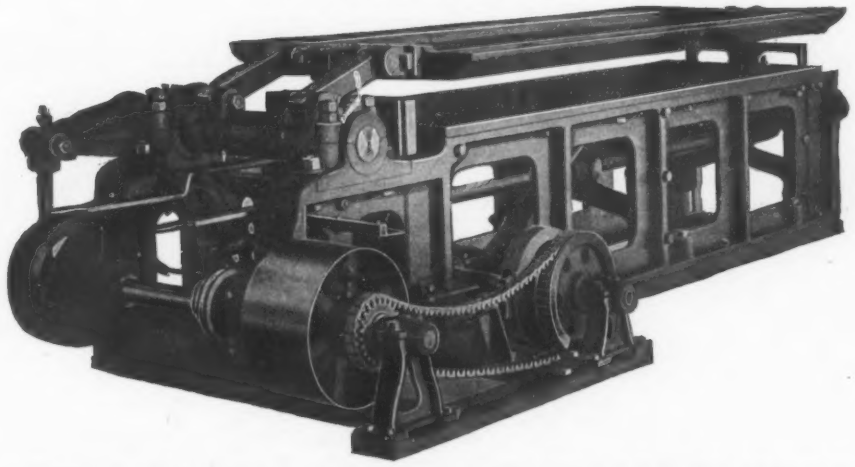

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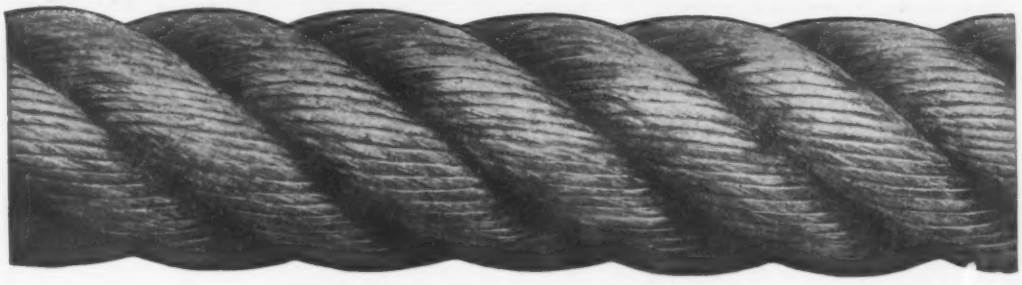

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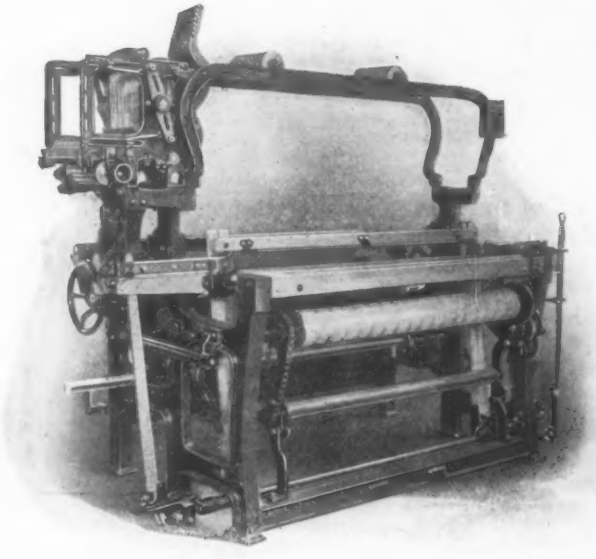

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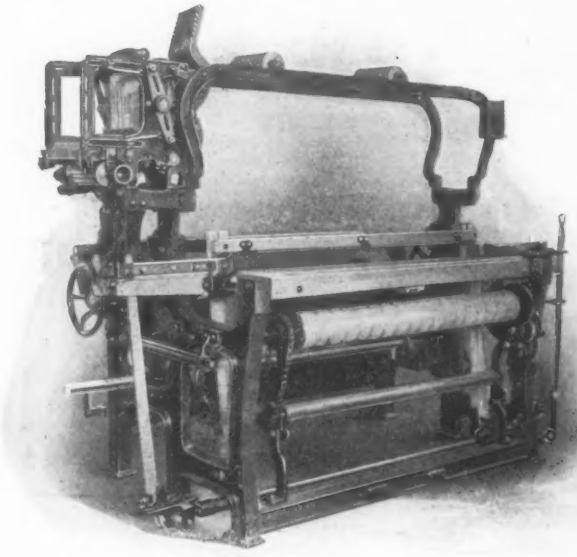

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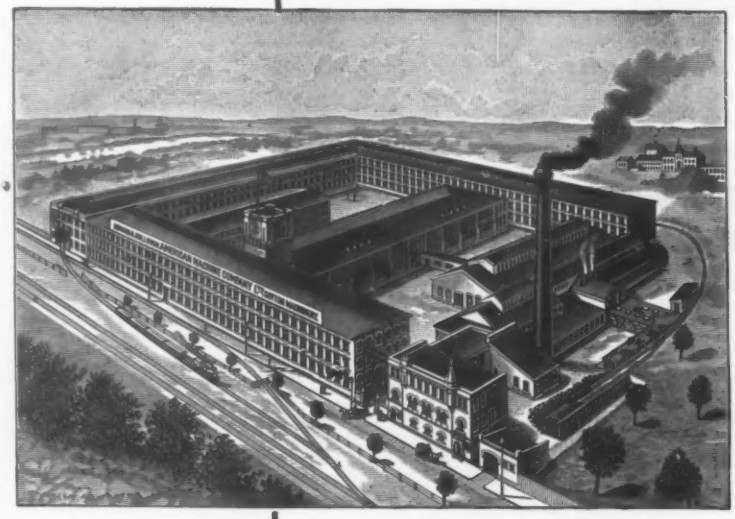

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Monthly Comment.

The Philippine and Other Tariffs.

Fears are being expressed on the other side of the Atlantic that some new tariff dodge may be adopted by the United States to give American manufacturers greater control of the Philippine market when the ten-year agreement with Spain ends in April of this year. The Manchester Chamber of Commerce hears from correspondents in the Philippines that we intend then to "assimilate the Custom duties of the islands to those of the United States," whatever that may mean, and the following from the address of the president of the Chamber, shows how the prospect is viewed in England:

From the Philippines letters have been received to the effect that at the close of the present agreement with Spain in April this year the Custom duties of these islands are to be assimilated to those of the United States. Surely the United States cannot seriously think of disregarding their well-known professions in favor of the policy of the "open door" in respect of the trade of the Far East. It is well to remember that though Cuba and the Philippines have been annexed within recent times by the United States, the former was conquered, whilst the latter were obtained by purchase from Spain. In the Philippines the total imports for 1906 amounted to $26,400,000, of which only $2,210,000 were free from duty. Great Britain's share was $5,554,000, more than half of which consisted of cotton goods, whilst out of the imports of $4,488,000 from the United States only $471,000 were cotton goods. You thus see how important it is for Lancashire to retain a hold on this market.—(Hear, hear.)

Another reason for complaint in foreign countries regarding our management of the Philippine tariff, is the refund of export duties on certain goods, chiefly hemp, shipped to the United States. If, as in the case of hemp, the product is admitted free into the United States, no export duty is levied in the Philippines; if it is subject to a duty in this country, the export tax is paid in the Philippines, but the American duty is reduced to an equal amount. On these products shipped to other countries, the export duty is levied and serves in most cases to increase the price to the foreign buyer by an equal amount. The way in which this refund is viewed in Europe is shown by the following extract from a recent letter to the "Manchester (Eng.) Guardian":

The United States is always willing to make pronouncements regarding the virtues of an "open door" policy, provided it is not their own door. They have not only proposed to offer a conspicuous instance of "anti-open door" policy in the Philippines; they have actually done it. The United States Constitution does not allow export duties, and although it has been stated again and again that their Constitution follows their flag, export duties are imposed in the Philippines. But on cargoes which go to the United States a drawback of the duty is given by the Customs at the landing port; hence exports from the Philippines to the United States pay no duty, but the exports

to all other countries do so. This is a practical illustration of how the United States keeps the door open when it is their own.

The questions involved in the Philippine tariff are not so one-sided as the opinion from Manchester would indicate. There are good reasons to be advanced for granting the United States special favors during the period of benevolent assimilation. At the same time it must be admitted that our management of the Philippine tariff thus far has been marked by certain objectionable features that afford good grounds for complaint in other countries. The first Philippine tariff after the annexation of the islands was framed by the military governor without discrimination against any particular country, and this element of fairness was retained in the revision made by the Philippine Commission in 1901.

The trouble began in 1902, when Congress abolished the export duty of products shipped to the United States, and was aggravated by the second revision a few years later. Although this revision was made nominally by Congress because of the refusal of the Senate to allow so important a law to be framed by the Commission, the responsibility for framing the new schedules rests on the War Department, of which Mr. Taft was then, as now, secretary. The actual work was done by subordinates in the Bureau of Insular Affairs, after a hasty and wholly inadequate investigation. Among the few suggestions received and adopted was one from a New York commission house, which recommended certain changes in the classification of cotton cloths for the purpose of lowering the duty on the standard grades made in American mills. The bill was signed by the President with the War Department pluming itself on having rendered an important service to American manufacturers.

Before this bill had gone into effect it was discovered that the changes instead of helping the American trade actually discriminated against the principal grades of goods made by American mills. Straightway the authors of the bill began to accuse one another, the final consensus of opinion being that the New York commission firm had been deceived by some crafty representative of an English house. Be that as it may, the clamor raised by the cotton trade resulted in an amendment to the cotton cloth schedule, which although nominally fair to all, in reality discriminated against cotton "splits," a specialty of Lancashire mills. The amendment was put into force so quickly that it caught a considerable quantity of goods in transit to the Philippines, and there is now pending a claim against the United States for damages on the ground that the duty was raised on "splits" without sufficient notice to foreign shippers. This clause leveled at cotton "splits" was naturally resented by the English trade, and has remained a standing grievance against us. Our readers will recall one excited English sympathizer who advocated dumping American goods into Manila harbor, a cotton imitation of the Boston tea party.

We have never attempted to excuse this "splits" amendment; it would be useless to do so even if we were so disposed. We are free to admit that not only have the foreign merchants whose goods were caught on the high seas a just claim against our government, but also that the United States went too far in enacting this scheme for turning the Philippine market over to American mills.

The two revisions of the Philippine tariff, one discriminating against American goods, the other against English goods, although a small matter in themselves, teach a lesson of much importance at this time. This lesson is that no tariff should be revised without the most careful investigation of the facts and analysis of all suggestions from interested parties. Here was a case where well meaning officials turned the work of framing tariff schedules over to subordinates and allowed unfair rates and classifications to go into effect without the slightest idea of their certain results. No one accuses Secretary Taft of any intention to injure the American manufacturer by the first revision; or the English manufacturer by the second. The result of his neglect to make a proper investigation in these two cases was, however, the same as if the schedules had been framed with malice prepense.

It looks now as if we were about to engage in another but far more difficult task in tariff revision. The mistakes in the little Philippine tariff will not be without their compensations if they teach our lawmakers the wisdom of the homely old adage, "Be sure you are right and then go ahead," in the revision of the Dingley bill

The Reform of the New Cotton Exchange.

Because of the leading position occupied by the New York Cotton Exchange, the question of improving existing methods of trading in cotton is centered in the reform of the New York institution. To bring all other exchanges to perfection with that one untouched would leave the main problem unsolved. On the other hand a reform of the New York Exchange would make it impossible for other and smaller exchanges to persist in the present objectionable methods. Conditions are now favorable for the accomplishment of this important work. Public sentiment is aroused over existing abuses. The administration seems eager to take a hand in the reform. Congress shows signs of responding to what it thinks is public opinion. And last but not least an influential party in the New York Cotton Exchange itself is agitating for changes in present methods so as to make the exchange a means for promoting the legitimate cotton trade instead of keeping it a device for encouraging speculation that causes heavy losses to both producer and consumer.

The essential for success in this work of reform, however, is yet to be provided. This essential is a calm, scientific investigation of the facts to the end that a fair and efficient system of trading on exchanges may be devised. Such an investigation requires time and the services of the ablest men who can be found possessed of a practical knowledge of present methods. It is with the realization of this that we have from time to time presented in these columns the best contributions to the discussion we could find. We believe the article by Prof. Chapman, the report of the committee of the New York Exchange and the discussion by President Jordan of the Southern Cotton Association belong to this class. Much remains to be done by a competent commission, the appointment of which we recommend to the authorities at Washington.

The Half-Time System in Technical Education.

Objections have been raised against technical schools, both abroad and in this country, that the class of scholars which they are most designed to help, labors under great difficulties in making full use of them. In order to be eligible for these technical schools, like the textile schools for example, a boy should have a certain knowledge of mathematics and other subjects taught in the lower grade common schools. This is all the schooling many lads have a chance to get. They are obliged to work and only the evening classes are available to them.

After a long day's work in the mill the boy is not in the best frame of mind or body for study or further labor, and with day time and evenings thus occupied, there is no opportunity either for home study in connection with his work or for the recreation which every normal boy and young man needs, to keep himself in proper trim. Only those boys whose parents can afford to support them until they are 18 or 20 years of age can afford to take the day courses in the technical schools, and for that reason we find those day classes attended by comparatively few students, while the evening classes are overcrowded at the beginning of each term and steadily dwindle toward the end because the strain is hard to keep up.

To meet these objections what is known as the half time system has been introduced in several industrial centers with the co-operation of the manufacturers. Under this plan two boys work alternately one week in the mill and one week in the school. Each thus gets paid for half his time. Both boys go into the mill at bell time on Monday morning, and the boy who has been in the mill the previous week explains his work to the boy from school and stays with him for an hour or two until it is time to leave for

school. On the following Monday morning after his week at the school he picks up the mill work again and the other boy takes his turn at school. This method preserves the balance both in the mill and the school, and it has also the advantage of keeping constantly before the students the close relation of their studies and the practical mill work. While the boys cannot earn full wages they are in most instances enabled to earn enough to get along and the advocates of the system claim, can finish their courses in less time and with less physical strain than in the evening classes and with better results.

This plan is followed in several European cities and we are informed by the Secretary of the Industrial Education Commission that it has been especially successful in Cleveland, Ohio. The manufacturers in some of the iron and steel industries of that city have given cordial support and sanction to the necessary arrangements. They find it well worth while, for the students who are constantly becoming better fitted for their work, still keep in touch and retain the close personal interest in the factory, and when their work is completed they have their old job or a better one and the manufacturer has a more efficient employe.

There may be some practical difficulties in the adjustment of such a plan with present textile school schedules and conditions, but the general theory seems well worth consideration, and through the co-operation of the manufacturers and the school authorities, would probably work out after a fair trial. If such a plan could be successfully carried out, it should go far toward removing some of the objections to the technical schools that have been raised, particularly by the unions and the operatives, who have felt that their sons were not able to receive the benefit in proportion to the expense to the state and cities.

The first cotton factory in the world to carry on in one establishment all the processes involved in the manufacture of goods from the raw material to the finished product was that established at Waltham, Mass., by Francis C. Lowell, in 1815.

The Baling of Cotton.

Efforts to improve the baling of cotton are to be made under novel conditions in Mississippi, where the Farmers' Union has persuaded the authorities to install two compresses for the penitentiary farms now conducted by the state. The intention is to have the equipment of the most improved type. The cotton is to be ginned and compressed under one roof ready for shipment to the mill and a special effort is to be made to improve the method of wrapping. An improvement in this direction will be welcomed regardless of whether it originates in a penal institution or not. One thing is reasonably certain, all the Mississippi authorities need do to effect an improvement is to bale the cotton in a different way from that generally in vogue, which is so bad that it is practically impossible to make it worse.

Short Time in European Mills.

The mills of Europe are sharing with those of the United States in the present business depression. The woolen and worsted mills in Saxony are running on short time, 750,000 spindles in this district being affected. The curtailment of production has been forced by the cancellation of old orders and the impossibility of replacing them with new contracts. Chemnitz knitters are also on short time, largely because of the falling off in the demand from the United States. Business is poor in the mills of Bradford, because of the let up in the Continental trade. The weaving mills of Lancashire have for some time past been placed in a difficult position by the high prices for yarn and the failure to obtain corresponding advances on the price of cloths. Recently this situation has been aggravated by a let up in the demand for goods at the old prices, and as a result the sentiment in the trade has become distinctly pessimistic. Time alone will reveal whether the present slackening of business is temporary or marks the beginning of a prolonged period of depression. In any event, however, the textile manufacturers of Europe are taking no chances, but

are determined to meet a decrease in the demand for goods with a corresponding decrease in production.

Under the German Agreement.

The imports of textile goods from Germany for the first eight months ending February, 1908, under the German agreement, and for the corresponding eight months of the previous year, were as follows:

	1907.	1908.
Cotton cloths, sq. yds.	2,316,247	2,285,120
Value	$406,334	$392,560
Per yd.	$.175	$.172
Linen cloths, sq. yds.	7,280,984	6,335,907
Value	$1,555,487	$1,450,804
Per yd.	....	....
Wool cloths, lbs.	1,566,073	1,266,117
Value	$1,492,840	$1,213,400
Per lb.	$.953	$.958
Wool dress goods, sq. yds.	6,316,991	7,549,142
Value	$1,486,486	$1,936,113
Per yd.	$.235	$.256
Silk goods	$5,037,640	$5,795,355
Cotton knit goods	$4,732,648	$5,927,142
Laces	$4,098,301	$3,671,760
Total value, 8 months.	$36,290,031	$37,823,420

A year ago a large part of the machinery in the textile mills of this country was idle because business was so good that operatives could not be obtained to run it. It was under such conditions that the German agreement was negotiated and signed. Blinded by that prosperity the administration saw no danger in making it easier to import the products of cheap German labor into this country.

The change in business conditions since that time has been enough to open the official eyes. A large part of the machinery in our textile mills is idle because orders cannot be obtained for the product. A large number of textile operatives are idle, while those who are employed are having their wages rapidly reduced. At the same time the German agreement continues in full operation, increasing the quantity of goods imported into this country. Every yard of imported cloth means the displacement of a like quantity from domestic mills, and consequently an increase in the number of unemployed.

Canada has 2 silk mills, 2 linen mills, and 2 print works.

The Price of Thread.

Last month the price of thread to the retailer was reduced from 67 to 60 cents per dozen of 200-yard spools. This was followed, rather slowly in some sections of the country, by a reduction from 6 to 5 cents a spool to the consumer, being a restoration to the price prevailing before the increase last summer. The apparent absence of profit to the jobber is explained by the method of marketing thread by the Coats Co. and American Thread Co. At the end of each six months the jobber sends to the thread-selling agency a signed statement that during this half year he had not sold any thread for less than the price agreed upon. In return he receives a check for a certain percentage of the amount of his sales for that period. In this way the price is maintained and the jobber gets his profit.

Silk Reelers.

The complaints by the silk reelers of France were recently ventilated at a Congress held at Alais. Among the demands formulated on that occasion were a minimum wage cut of 40 cents a day; 8 hours for a day's work; and a share of the bounty now paid by the government on French silk. A circular issued at the Congress stated that the wages now earned by the weavers did not average 32 cents a day, while the employers received a large sum from the government in the form of bounties. It was claimed that the public funds might better be spent for an improvement of the condition of the workers than for increasing the profits of the employers. It was stated that the girls employed in reeling silk began work at an early age and that many of them contracted dangerous diseases by following this occupation. The proposition to renew the bounties on silk made the present time, in the opinion of the Congress, very favorable for bringing the grievances of the workers to the attention of the legislators.

In 1906 Denmark had a population of 2,600,000, of which 54 per cent. belonged to the agricultural class.

Colonial Cotton.

One of the important functions of the British Cotton Growing Association is the annual banquet. On these occasions the enthusiasm appears to be in inverse proportion to the supply of cotton. The last one was held a few weeks ago at Manchester, at which letters were read from and speeches made by a number of distinguished sympathizers, including the Prince of Wales, Colonial Secretary Winston Churchill, the Duke of Marlborough, Sir Alfred Jones and C. W. Macara. Several extracts from the proceedings are of interest on this side of the Atlantic. Sir Alfred, in his opening speech, put all his hearers in good humor by this attempt to lift the curtain that hides the future:

In cotton growing we now have before us an enormous future. We can grow as much cotton as we want and there is no reason in the world, so far as I know, why we cannot grow cotton to supply America. (Laughter and cheers.) There might also be many other countries we might supply, and the Association could grow cotton cheaper than other countries could grow it themselves, or than the Lancashire spinners could get it anywhere else.

If this had come from Greenville or Texarkana we might have accepted it in a Pickwickian sense, but conservative Manchester permits of no doubts. Having settled the main issue Sir Alfred followed with this:

The Cotton-growing Association was not supported by Lancashire as it ought to be. (Hear, hear.) But Lancashire never recognized what she had got in these great countries in the way of cotton supplies.

Without attempting to explain why cotton growing areas that could supply America and "other countries" should need "support," the speaker took up the question of labor supply:

We could grow cotton in Africa and we had labor there, and, owing to Mr. Churchill, we were running a railway of 800 miles in Africa in a country scarcely touched by commerce before. There they had ten millions of people ready to work for them and who would work at sixpence a day. (A Voice: "Shame on it," and laughter.) Yes, but that would be a good sum to a man who previously got nothing. (Laughter.)

Mr. Churchill's conscience was pricked either by the plan to pay the natives 12 cents a day or by the "Shame on it," for later in the evening he offered this more serious and statesmanlike explanation of real and apparent wages:

Then gentlemen, I heard an interruption with regard to the wages which are paid to the natives for the cultivation of cotton. Don't let us quarrel about the names of things. The point about wages is not what their nominal figure is, but how many days' subsistence can a man earn for his wages. (Cheers.) That is what matters to a man —the nominal figure is what matters to the statistician, and I am more interested in the man than in the statistician. I venture to say that we can show the natives of Uganda and of West Africa opportunities of earning wealth which previously was quite beyond their dreams. Although the actual nominal figures to us seem very small, in West Africa, for instance, they have over very large areas been content to be paid in kowri shells—hardly an object of desire among the populations of more highly cultivated countries.

And then Sir Alfred made this attempt to appease the voice, "Shame on it":

He proceeded to deal with the question as to the payment of sixpence a day to the African natives, and explained that he had started on his own account an agricultural bank, the purpose of which was to finance those who undertook to grow cotton. A loan of £5 to such natives was a fortune, and if these loans had ultimately to be made to ten millions of people it would be seen how great an undertaking the future might call for. "I am working in the interests of this country," Sir Alfred concluded. "I am an Englishman, and I think the more prosperous you can make these colonials the better they are as an asset to this country." (Cheers.)

These explanations will have to stand until the railroad has been built and the natives have decided on how many days' subsistence they can obtain from half of a British bob. Sir Alfred, continuing his speech, administered this rebuke to the British people for their backwardness in coming forward, evidently an original discovery by the speaker:

The British people had to some extent discovered the value of their great colonial empire. There were many things besides cotton to be dealt with later, but the British people must learn to be more earnest than they have been; they must turn their attention in a more devout way to getting what they thought they ought to have. (Hear, hear.)

It was not, however, to be a game of devoutly grabbing things. There was to be give as well as take, although the speaker failed to explain by figures how much of the new supply of cotton would be required for manufacturing additional goods for the natives:

I am perfectly certain that in ten years we will get to a position which will be security for Lancashire and prosperity for our colonies. (Hear, hear.) Prosperity for the colonies means that the money given to the colonial comes back to this country for the purchase of the finished article. That is a very happy position for the British people to be in. (Hear, hear.)

A voice, whether the one that gagged at a sixpence a day, is not stated, brought up the subject of baling cotton during Mr. Churchill's remarks:

You will be glad to know that we have been able to arrange in the last few weeks with the Treasury for some £10,000 a year for three years to be expended simply and solely on scientific control by persons versed in the cotton growing and all the necessities of the cotton trade. Here we fall back on the opinions which our expert friends of the Cotton Growing Association are able to give us on the whole business of cotton growing in Uganda. (A voice: Let it be baled properly.)

We propose to fall back upon the best advice we can get from Lancashire in regard to a matter vital to Lancashire. (A voice: You will get it here.)

Sir Alfred lent his voice in condemnation of bad baling:

If the Association could boast of nothing else it had done something showing the Americans how to pack cotton. He knew of no article of merchandise that was packed worse than American cotton.

This was getting down to a bed rock of fact. Nowhere will there be greater rejoicing than in America when the American cotton bale is reformed as the result of the good example set by Englishmen in Uganda or Mississippi. For this reason the thinly veiled intimation of a dislike for visits to America, found in the speech by William Mullin, of the Amalgamated Association of Card and Blowing Room Operatives, is somewhat disquieting:

Raw cotton had to be got, and it was better to get it from British colonies than to make pilgrimages to America in order to teach the Americans their business. (Hear, hear.)

Mr. Mullin is certainly mistaken. European pilgrimages to America are the source of as much pleasure to the pilgrims as to ourselves. Perhaps, however, Mr. Mullin spoke as he did not because he loved America less, but because he loved his homeland more. The idea that in some mysterious way Lancashire will find the greatest security in cotton grown under the British flag ran through all the speeches and messages of the evening.

A touch of the practical was given to the proceedings by J. Arthur Hutton of the Cotton Growing Association, who spoke on "Progress":

If the Colonial Office will press the button, we will do the rest. The production of cotton under the auspices of the Association had grown from 2,000 bales in 1903 to 6,000 in 1904, 11,000 in 1905, and 17,000 in 1906. The annual report for 1907 would show a production of 26,000 bales. In 1903 the total value of the cotton produced was about £29,000; last year the value was £400,000. To raise up a business with an annual turnover of £400,000 in five years was an achievement to be proud of. The first annual crop of 100,000 bales was getting in sight, and when that was first accomplished they could say that they had more than justified their existence. Cotton growing was like a snowball—the difficulty was to get it started; once started, it went on increasing rapidly year by year.

The Foreign Trade of Cuba.

About two-thirds of the total foreign trade, export and import, of Cuba is with the United States. The exact proportion for 1906 is 65 3/4 per cent., as compared with 62 3/4 per cent. in 1903, the last year before the present reciprocity treaty. In 1906, the trade was divided as follows:

Exports	$105,199,315
Imports	104,395,592
Total	$209,594,907

The share of the United States in Cuban exports and imports for 1903 and 1906 respectively, is as follows:

1903.		
Exports to U. S.	$62,757,845	80.1%
Imports from U. S.	25,713,667	41.2%
	$88,471,512	

1906.		
Exports to U. S.	$88,981,407	84.6%
Imports from U. S.	48,830,629	46.8%
	$137,812,036	

The textile trade between Cuba and the United States is practically confined to cotton goods, which we exported to the value of $507,985 in 1903, and $1,675,863 in 1907.

Wider Markets for American Textile Mills.

When many textile manufacturers consider it a wise precaution to restrict production in order to maintain the present satisfactory condition of stocks of merchandise and to prevent a glut in the market; when, as a consequence of such action, a considerable number of operatives have been thrown out of work, it seems to be a good time to examine the markets at home and abroad to determine which is the most promising field for obtaining work for the unemployed.

OFFICIAL EFFORTS.

For years the government departments and bureaus have paid especial attention to the development of the foreign market for American goods. Cabinet officers and chiefs of bureaus have made long and laborious speeches, telling of the unlimited opportunities to sell merchandise that await the American manufacturer in foreign lands. These officials have told us that they could do much to develop this foreign trade if they only had an appropriation. Congress was persuaded to provide the needful, and during the past few years the government has had regular and special agents traveling in foreign countries for the purpose of collecting and reporting information that would aid American manufacturers to sell goods to the foreigners. We have had the reports in large volume and great variety, frequently accompanied by samples of the goods the foreigner wanted, and detailed statements of what and how he would pay for them.

HELPING THE GOVERNMENT.

Throughout all this investigation special stress has been laid on the possibilities of the export trade in cotton goods. Desirous of helping along the good work we obtained from the Bureau of Manufactures a large number of the cotton goods samples received from the special foreign agents, analyzed them and for several months published the results in this journal. Samples of the goods were placed on exhibition in various parts of the country. Manufacturers were informed that they could obtain the samples on application to the bureau at Washington, and every effort has apparently been made by the Washington government to promote foreign trade with the appropriation.

DECREASE IN EXPORTS.

In view of the attention given to cotton goods in this investigation it is interesting to note the course of the export trade in that line. For the eleven months ending November, 1907, our exports of cotton cloth dropped to 205,151,538 yards, as compared with 485,229,111 yards for the corresponding period of 1906, and 720,739,565 yards in the 11 months of 1905.

We do not point to this decrease in the exports of cotton goods as a result of the government's efforts to promote that trade, but simply desire to record the fact that those efforts have not prevented this slump during a period in which the cotton goods export trade of Great Britain shows an increase compared with the two preceding years. A fair standard by which to judge of the efficiency of this class of government work would probably be found in the experience of individuals. What manufacturer has been able to sell goods to foreign countries because of these efforts of the United States government? The fact that we have heard of no such case is not conclusive. The Bureau of Manufactures may have the record of many such cases on file. Until that record is produced there will be no evidence to disprove the claim that such governmental activities have not fulfilled the promises made for them.

SECRECY IN BUSINESS.

Secrecy in business operations is frequently essential to success. What the merchant wants, what he is constantly seeking, accumulating and guarding from his competitors is knowledge of the wants of his customers. This includes details regarding fabrics, prices, samples, methods of doing business, in fact just the information that the Washington government has been seeking

in order to publish it broadcast. The difficulties in obtaining such data by government agents are obvious. If obtained much of the information is out of date long before it is given to the American exporter, because the value of commercial intelligence depends altogether on its being timely and thus enabling the merchant to keep in close touch with the trade. Quotations of cotton goods in China three or four months ago are useless to the exporter now. What he wants to know is what goods the buyer wants today and the price he will pay for them now.

THE MAINSPRING OF TRADE.

These facts are the basis of the belief that in promoting the trade of individual merchants and manufacturers there is a limit beyond which the government cannot profitably go. That there are many ways in which trade can be promoted by the government omits of no dispute. What those ways are we will not attempt to point out here, our present object being to call attention to the mainspring of trade, individual initiative prompted by individual selfishness.

DRAWING THE LINE.

This principle finds a striking illustration in the development of British trade, which has been brought about by a combination of official protection and the let alone policy. The British government has protected and promoted British trade persistently, even if not always consistently, by methods more direct and effective than taxing imports. At the same time the individual British manufacturer or merchant has had complete liberty within a considerable range of activity, where he not only could, but was forced to do as he thought best. Affairs within that circle were a closed book to officialdom. There was neither official protection nor official oversight. This divorce of the government and the manufacturer is illustrated by the fact that the British government has never taken any census of British industry. The first census of this kind is now being compiled, and will not be completed for several months.

BRITISH TRADE.

Under this system of government protection and individual self-reliance Great Britain has developed her vast export trade, which last year amounted to $2,071,354,336 worth of British and Irish products, nearly all manufactured goods. This trade extended to every part of the world and to it we invite attention in connection with the problem of extending the American export trade. Over one-quarter of the British exports, rated by value, consisted of cotton goods, nearly all of which were made from American cotton, and which, because of their general use, afford an excellent standard by which to judge of the extent, distribution and possibilities of foreign trade for the United States.

EIGHT MILES OF CLOTH A MINUTE.

Like the distances to the fixed stars, the cotton goods trade of England is so vast that the ordinary expressions by long strings of figures convey no idea to the mind. There is little or no meaning conveyed by the bare statement that last year England exported 6,298,040,500 yards of cotton cloth of all widths. Possibly a better idea of this trade will be obtained from the fact that, for 24 hours per day and 300 working days in the year 1907, England exported cotton cloth at the rate of 497 miles per hour. This is equal to 8 1/4 miles per minute, or 729 feet per second, day and night. This stream of cotton cloth separated and extended to all parts of the world. Asia took 60 per cent.; America (North and South), 15 1/2 per cent.; Europe, 12 per cent.; Africa, 8 per cent.; unclassified, 4 1/2 per cent. A more detailed statement of the distribution is as follows:

Asia:	Yards.
India and British East Indies	2,572,293,400
China and Hong Kong	553,373,000
Dutch East Indies	207,936,600
Australia	158,830,900
Japan	121,240,900
Persia	51,080,600
Philippines	50,362,600
New Zealand	41,997,600
Total Asia	3,757,115,600

America:	
Argentine Republic	149,224,000
Brazil	144,247,900
Chili	112,445,500
United States	98,375,900
Canada	91,659,000
Cuba	64,242,700
Columbia	61,596,300
British West Indies	53,792,800
Venezuela	53,327,800
Central America	46,248,500
Peru	34,114,700
Uruguay	32,802,900
Mexico	29,390,600
Hayti and St. Domingo	10,613,300
Total America	982,081,900
Europe:	
Turkey	401,335,200
Belgium	102,355,000
Germany	85,931,900
Holland	54,784,300
Greece	29,895,000
Portugal, Azores and Madeira	29,751,100
France	21,593,600
Italy	17,748,000
Austria-Hungary	4,345,800
Malta	2,997,200
Gibraltar	2,395,100
Total Europe	753,132,200
Africa:	
Egypt	265,727,500
West Africa, British	94,051,600
West Africa, Foreign	56,219,400
Morocco and Algeria	56,320,500
South Africa, British	52,941,500
Total Africa	525,260,500
Unclassified	280,450,300
Total yards	6,298,040,500

FACTORS IN BRITISH SUCCESS.

As the vast proportions of this trade dawn on the mind of the American and he recalls that the bulk of the goods is made from cotton grown in the United States, the question at once occurs to him: Why cannot American mills capture this business? Before attempting to answer that question let us consider the influences that have contributed to British predominance in the cotton trade:

1. Origin and first development of the modern cotton industry in Lancashire, the result of inventions in power spinning and weaving.

2. Development in building cotton machinery, made possible by the supply of cheap iron and coal.

3. A large supply of cheap labor.

4. Development of the commercial organization.

5. Concentration of all branches of the cotton industry, machine building and export markets within a small radius.

6. British policy of official protection to British trade throughout the empire.

7. Real free trade in raw cotton.

8. Development of individual initiative resulting in the aggressive, self-reliant, keen, skilful and secretive British manufacturer and trader.

The result is the English cotton trade of today, which is maintained not only by the influences named, but by the inertia of established trade.

AMERICAN COMPETITION.

Now as to the possibility for Americans in this trade. There are no secrets regarding the processes of cotton manufacturing; we have at our disposal the accumulated experience of the world in this industry and the building of cotton machinery. We can develop a commercial organization to meet all requirements. We can concentrate manufacturing and merchandising. Three-quarters of the world's cotton crop is raised within our borders, and we have at home an ample supply of coal and iron. Our manufacturers and merchants are the equals of the Englishmen in the capacity for individual initiative, and can become as aggressive, keen, skilful and secretive.

Thus in all but two of the above-named factors in British preponderance in the cotton trade we find no handicap for the American. The two remaining are official protection and cheap labor. The first is impossible for us because we have no vast colonial empire on which the sun never sets and over which to exert this arbitrary official protection in which the British government is so adept. On the contrary it is the constant prayer of 90,000,000 Americans that some honorable way may be found to get rid of the few distant colonies now in our possession.

CHEAP LABOR.

The lack of this official protection might not prove an insuperable obstacle. Let us,

therefore, pass it over and come to the last and vital factor, cheap labor. Cheap labor, not only throughout the mill, but in every occupation that contributes to the production of cotton goods. Cheap labor in the mines, in the machine shops, in the building trades, and in all the industries allied to cotton manufacturing. We lack that cheap labor now. We can obtain the cotton goods trade that England now controls only by bringing American wages down to or below the English level. The efficient organization of labor has brought about wages and conditions in certain departments of English mills, weaving for example, by which the labor cost per unit of production, despite the lower weekly rate per operative, may equal or exceed the cost in American mills. This, however, is the exception. Taking into consideration all processes of manufacturing and all allied industries, American wages would have to suffer a material reduction in order to equalize the labor cost of English and American textile products.

To this it may be said that without cheap labor we are now able to sell cotton goods in foreign countries. The quantity, however, is but a bagatelle compared with the total export trade of other countries and consists of goods in the cost of which labor is but a comparatively small item. As the cost of labor per yard increases the possibility of manufacturing cotton goods in America for export rapidly disappears. In a business so extensive as the world's cotton trade the United States, even with high wages, will always be able to dispose of a small quantity of goods abroad. The present size of that trade may be judged by the fact that last year it was but one-twenty-eighth of the British exports of cotton cloth. In other words, England exported as much cotton cloth in a day as the United States exported in a month. With high wages here and low wages abroad foreign countries need have no great concern over American competition in cotton goods. Under such conditions we must in the main be content with our heaven-sent monopoly of raw cotton and sell to the foreign spinners at the highest market price what raw material we can spare to be manufactured into goods with their cheap labor.

MAKING THE UNITED STATES SELF-SUPPORTING.

Gaining foreign trade by reducing American wages to the foreign level is out of the question. The proposition would be monstrous were it not ridiculously impossible. Trade purchased at such a price is not worth having. The American policy of high wages and a well-fed, well-clothed and well-housed population must be maintained. But, some one may ask, what is to be done at such a time as the present? How shall work be provided for the unemployed? What has already been said leaves but one answer to that question. Having eliminated foreign countries from the field for providing American textile workers with immediate employment at American wages, there remains only the home market in which to attain that object. What opportunities do we find here? For the 12 months ending December, 1907, the imports of textile goods into the United States were as follows:

Cotton goods	$79,524,943
Fiber manufactures ..	65,554,648
Silk goods	40,748,535
Woolens and worsteds,	23,416,534
Foreign valuation ..	$209,244,660

Adding 50 per cent. to cover the duty and bring the value to the American standard, we find the domestic valuation of the textile goods imported last year to be $313,866,990. At the 1905 rate of production the manufacture of that quantity of goods would have given employment to 191,000 mill operatives, or more than one-quarter of the total number, 739,239, employed that year in all the textile mills of the United States. Here lies the opportunity for enlarged markets for American mills. Let American manufacturers who may have machinery idle investigate the possibilities of making for the home market the goods now made abroad. Let him do this aggressively, skillfully, secretively, relying on himself to find the opportunity, improve it and guard the information for his own benefit.

A TARIFF TO PROTECT AMERICAN LABOR.

If he finds, as he may, that, because of the lower cost of labor and other items, the foreign manufacturer is able to land his goods duty paid in America at a price that prohibits American competition, let him demand a higher duty on that product that the foreign goods may be shut out and the work given to American mills. If we need higher duties let us have them. This is the doctrine of reason and common sense. It is the American policy, and needs no apology. The protection and development of the home market offer the best means for obtaining wider markets for American mills and work for the unemployed.

STYLE SUGGESTION FOR WOOLEN MANUFACTURERS.

A few weeks ago the tendency of the trade was to restrict their purchases to a few novelties, with the idea that these would even up their lines. This filling in has been carried on with an increasing demand, so that while the initial orders are small the volume of them is large and if there is business, which there undoubtedly will be, the manufacturers who have placed their samples will have more than they can do.

The present year, as far as the woolen goods situation is concerned, is a close duplicate of 1899, when the trade was slow to place orders, giving them only for sample pieces and few of these, the cut method not being in vogue then. The market that entire year until September was quiet and then the demand commenced and clothiers were in a quandary to get goods, being willing to do anything to fill their requirements.

One of the largest western clothiers said last week that he had not ordered enough goods to pay even a small part of his expenses and just as soon as he got in all of his sample pieces he was going over his line and place duplicate orders. He could not afford to wait until he had sold the goods for then he would have less chance of getting his orders. The man is a keen, sharp merchant and seldom errs, and this feeling is becoming prevalent among the largest merchants, and certainly points to a large business in the fall. It is necessary for them to replenish their depleted stocks. People have money and have been saving it so long that when the buying fever takes them, which there is no question it will, the stocks of piece goods in the market will be cleaned out in short order.

A number of commission merchants and selling agents and a large woolen company are so desirous of placing their goods that almost any offer is accepted. This is particularly demoralizing and so long as this policy is continued just that much longer is the revival of business going to be kept off.

This tendency to reduce prices has been adopted on new heavy weight lines. Some manufacturers whose initial business has not been very large, in order to increase, have reduced their prices, and obtained a few more orders, but in many instances not enough to warrant the reduction and offset the harm done in breaking prices, which is always a bad thing, destroying the confidence of the purchaser.

A large number of lines are being sold at a point where there is no profit. What these manufacturers are going to do when the demand comes is a question, for most assuredly the price of raw material will advance as soon as the mills get to running.

The demand for spot goods for immediate use is confined chiefly to brown light weight worsteds and all shades of brown in stripe effects can be sold, but few plaids. Some of the best selling shades have been the very light browns, which incline towards a burnt onion shade; the demand for these has not been satisfied so that this color will sell another season.

There has been a growing demand in the heavy weight fabrics for the old fashioned hair lines which sold about twelve years ago. These have been made in fine goods as high as $3.12 1/2, and have also been produced in all grades. Austin T. Levy shows a line which sells in the neighborhood of $2.00. H. & W. Lewis also have a line. The Oldtown Woolen Co. of Oldtown, Maine, are showing one at $1.07 1/2. Bauendahl & Co. has a line at 97 1/2 cents. These are only a few,

for in a month almost every mill which is short of business will have a line.

H. Bauendahl & Co. have just bought a line of $1.80 kerseys, the fancy styles of which are copies of a higher priced fabric.

One of the best selling heavy weight lines is that made by the Worcester Woolen Mill Co., or L. Bachman & Co., made at the Excelsior Mills, Farnumsville, Mass. Fabrics are shown in 3/4 width at 27 1/2, 32 1/2, 39 and 42 1/2 cents all net. These are exceptional values and the secret of their success is probably the fact that one weaver tends twelve looms, this mill having been fitted with new Draper looms.

Terhune, Waring & Co. also have had a large sale on a fabric at 72 1/2 and 75 cents net; these show good value.

It is too late now to make new fabrics for heavy weights, but a line which can be sold soon is a fourteen ounce tourist cloth for the cloak trade. This is wanted in the various shades of browns and olives in bright colors and striking combinations, the general tendency being to run to novel effects. The stripe patterns will be the best and large effects most in demand.

These cloths will also sell in fancy backs and many of the fancy back fabrics which have been made for men's wear if produced in lighter shades and fancier patterns on the back, but reduced in weight to fourteen ounces, will sell readily.

One of the best selling styles this spring to the cloak trade was a stripe covert. After this had had a very large sale it was discovered that it was printed with a wash color. The fabric originally was a plain covert, which they were glad to sell at eighty-five to ninety cents. After spending seven cents a yard to print them, they were readily sold at $1.10 and $1.15.

This printing of plain fabrics has had quite a run, for it has been used to a great extent on broad cloths. Many lines are being printed for the coming season in stripes of various widths, and the hair line stripe with a decoration will be a good style to produce.

The coming light weight season will see a decided demand for bright effects and novelties. There seems to be no limit to the possibilities in this direction and light shades will predominate.

The olive tones which border on a drab are very desirable in delicate shades with bright colored decorations, which tone and harmonize with the ground work.

The styles will be more varied than has been the case for some seasons, the neat pin checks again coming into vogue as well as the fine hair line stripes, both of these striped or plaided with striking colors but which harmonize with the ground color.

It is an open question if there will not be a revival of greys. The shade which will be wanted will be the stone one in both a light and dark.

The worsted finish fabric will not sell for light weights. It is necessarily a warm looking one and is not so well adapted to light weights as the clear finish worsted which will have the largest call, both in the fancy yarns and in the cross dye fabrics.

One of the largest selling fabrics in heavy weights has been a cross dyed worsted. From the rapidity with which competing lines are being put on the market it is safe to say that for the light weight season the competition will be decidedly keen.

Fancy cassimere fabrics in the close, hard finish in tinsels and plains will also sell, but in all lines, whether cheap goods or high priced ones, the demand will be for nobby styles.

According to a consular report, the number of pieces of plain cotton goods furnished by the United States to China in 1906 was 8,544,165; the United Kingdom furnished in the same year 10,785,227 pieces.

For the first six months of 1907 the imports of goods into Brazil from the United States increased 24.4 per cent. over the same period of 1906; British merchandise advanced 42.5 per cent. and German goods 46.1 per cent.

For the fiscal year ended June 30, 1907, the export of lace from Nottingham to the United States was $3,454,444; from Calais for the same period it was $7,652,596; the imports of lace from these two cities was $11,107,040.

COTTON MILL ORGANIZATION.

BY ACCOUNTANT.

(Continued from March.)

When the invoices for goods purchased or expense incurred are received from the purchasing department all prices and computations are supposed to have been checked and found correct and certifications endorsed upon their face. The bookkeeping department then proceeds to make up a voucher for the charges, voucher being numbered as per the next vacant line in the register of vouchers.

The voucher, form B 3, is to be an especially good one, since it gives us, by using a carbon, an exact copy of the check through which payment will be made and also allows us to set down our distribution of charges to accounts in detail without this being known to disinterested parties.

On the left of the voucher is set down the dates of invoices and amounts, with discounts, if any, for early payment, while the right hand side is practically the ordinary check form and filled out in the usual way by entering the net amount which it is required to cover.

The lower section is retained for entry of the distribution of charges, which is usually determined by the accountant who has all the papers and a knowledge of the expense and other accounts and what should enter into them.

When the voucher is filled out, the check section is detached and filed in what is called a "tickler," so that it will be brought to attention on the day upon which payment should be made. The copy then passes to the voucher register clerk for entry upon the line which was allotted it when numbered.

The register, B 4, is arranged to facilitate the entry of distributions under general headings, on the credit side the usual heading being employed for date, number, payee, terms and folio. These are followed by the columns, "Accounts Open" and "Accounts Payable." When checks covering the vouchers are entered in the cash book, a note of the check number and date is made on the register in the columns provided.

On the debit side the first column,

VOUCHER REGISTER

CREDIT									DEBIT																
Date	Voucher No	Favor of	Terms	Led Fol	Accounts		Paid		Stores	Manufacturing		Expense								Sundry		Plant		Stock
					Open	Payable	Date	Check No.				Office		Selling		Auxiliary		M'f'g						
										Des.	Amt.	Des.	Amt.	Des.	Amt.	Des.	Amt.	Des.	Amt.	Des.	Amt.	Des.	Amt.	
Mar. 30.06	5400	Small Mfg. Co	2/30			52 20	4/30/06	6304	74 52													Gen. Exp.	8 00	
" "	01	Payroll 3/24/06		68		11450 00	3/30	5800												Amt. Wages	11450 00			
" "	02	Ford Co		906	140 00				140 00															
" "	03	Cook & Baker	1/10			5 00												Cond. Yarn	5 00					
" "	04	Wood & Co.				200 00																		200 00
	05																							
	06																							

FORM B 3.

headed "Stores," is the controlling account for our stores ledgers, the account being charged with practically every material purchase, including material for product, supplies, repairs, part construction, construction, machinery which the company proposes to install, and supplies for factory, office and general office use.

The "manufacturing" account is really the controlling account for the prime cost records or ledger. Distributions to this account are usually charges on some numbered manufacturing, equipment, or other department order. The number of the order is entered with the amount and is then posted to the cost sheet for the order.

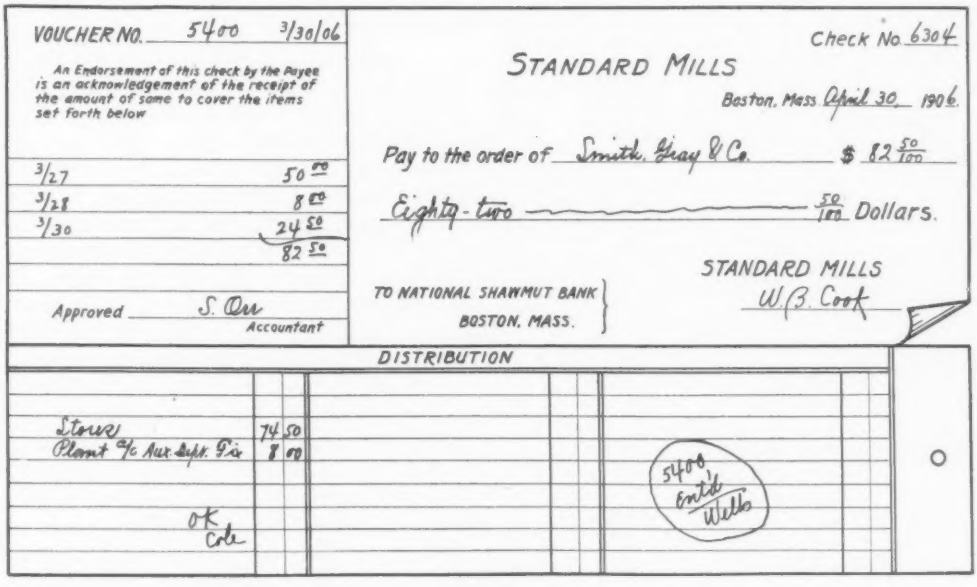
The expense account headings follow and cover the four general classes, a very elaborate system of symbols being used for itemizing which will be described in detail later.

The "Sundry" column is used for miscellaneous and individual posting items, while

"Plant" account charges are for additions to plant or equipment which are fully erected or installed by outsiders.

"Stock" is intended to cover merchandise purchased and sold without entering process.

The "Tickler" brings forth each day the checks to be dated, numbered and signed, after which they are entered in the cash book, which is of the ordinary type, but having several additional columns for the keeping of bank accounts, deposits, withdrawals, etc.


VOUCHER NO. 5400 3/30/06

An Endorsement of this check by the Payee is an acknowledgement of the receipt of the amount of same to cover the items set forth below

3/27	50 00
3/28	8 00
3/30	24 50
	82 50

Approved S. Orr Accountant

Check No. 6304

STANDARD MILLS

Boston, Mass April 30, 1906.

Pay to the order of Smith, Gray & Co. $ 82 50/100

Eighty-two 50/100 Dollars.

TO NATIONAL SHAWMUT BANK BOSTON, MASS.

STANDARD MILLS
W B. Cook

DISTRIBUTION

Stores	74 50			
Plant % Aux. Dept. %	8 00			
OK Cole			5400 Smith Wells	

FORM B 4.

The invoices, with other papers attached, are filed in cases alphabetically, after being stamped with the number of the voucher upon which they were entered. The voucher is filed numerically in a post binder and the canceled check, when received, is filed numerically in cases.

We have covered our system from the requisition for material, to the final entry of payment While some people say that system is often a very popular excuse for automatic stupidity in business and a very handy subject for the "undesirable citizen's" magazine article on how he succeeded in life, there are several important things which our system accomplishes. It insures proper care, storage, receipt and delivery of material, keeps the capital investment as low as is possible, prevents running out of stock, minimizes loss through deterioration, misuse and theft and insures a place for everything and a knowledge of where to find it when wanted.

The stock record gives us a check on the store keeper, insures accuracy in reports of receipt and delivery of material, a running inventory of stock on hand, a price record which is always "up to date" and information on the receipt of material, quantities used, etc.

The Superintendent is given opportunity to hold up orders for material or supplies which, in his opinion, it is not desirable to continue to keep in stock.

When the requisition reaches the Purchasing Agent it bears the last number of the purchasing order on which the material was bought and the price paid for same, thereby saving any further reference and the keeping of duplicate records.

The filing of the invoices, receiving slips, purchase orders and requisitions together, makes it very convenient when occasion arises for reference, while the advantages of the voucher system are generally known to all.

(To be continued.)

THE LONDON WOOL AUCTIONS.

ARLES H. HARDING.

(A Lecture before the Alumni Association of the Philadelphia Textile School.)

Mr. President and gentlemen: The question is sometimes asked, why do Americans go anywhere outside their own country to buy wool? Why do they not use American wool for their products? When you consider that the clip of America runs in round numbers about three hundred millions a year, having varied from two hundred and fifty, say, to three hundred and sixty millions, and lately stationary at about three hundred millions a year, and with the consumption of wool in America at about six hundred millions a year, it is very evident that the American, however patriotic he may be and desirous of using wool grown in his own country, must go somewhere to buy the balance of his wool. That is the first reason why he must get away from home.

Last season, that was a year ago, the United States took 7 per cent., and the year before that 8 per cent., which was the largest quantity of wool the United States has ever taken out of Australia. Those of you who are familiar with the wool business know that was due to the fact that the largest consumer of wool in this country went into the Australian auctions that year and bought a large quantity of fine crossbred wools. At that time 3/8 blood wools were in great demand in this country. To get around this difficulty the company I have just referred to sent a buyer to Australia, and bought a quantity of wool that raised the amount usually taken by the United States, from 2, 3 or 4 per cent., up to 8 per cent. Last year this company did very little business in Australia because the condition of business in October was not such as to encourage speculating in Australia, or contracting debts that would have to be paid in the near future. Accordingly the share of the United States fell to 2 per cent.

Now we will suppose we are ready to go to the London sales. The London auctions are held in January, March, May, July, September and November. There was a series begun yesterday which will be known as the "March sales." Those sales began at 4 o'clock yesterday and were reported so promptly that I had a telegram at 2.30 telling me what had been done in the afternoon in London and what was the probable course of events. This telegram also advised me that among the offerings there was "nothing suitable for America." I want to call your attention to the statement made, "nothing suitable for America." Some of the calls said: "As usual there is nothing suitable for America on the first day." And why "as usual?"

Another reason why Americans have gone to London and other places to buy wools is the fact that the American woolen manufacturing business has always been following in the procession headed by France and England. Our manufacturing business came from England. The men, some of them, are alive yet, who have known the history of American wool manufacturing, are Englishmen or the sons of Englishmen. Our machinery, our experts very largely, are from England. But more important than that there has always been a tendency, which up to 1876 was an absolute rule, that the woolen stuffs manufactured in America should be copies of something that had been made in England or on the continent. Those of us who remember the situation that arose after the Centennial Exposition of '76, will recall that as the first time when there was a disposition on the part of American manufacturers to abandon the practice of getting lines of samples from abroad and copying for the next season the goods made in other countries.

As a natural result of that situation, the man who had specialties to make must find wools that were adapted to his purpose. It was not a question at all with him, and it is not a question with him yet, "shall I buy American wools to do this?" The question is what will do the thing that I want to do? Today, by the pressure there is for cream-whites in dress goods, the man who wants to make that fabric has raised in his mind, first, the question, where in the world will I find the wool that will make the yarn that will produce that effect? If American wool will

do it, well and good. If I must go to the Falkland Islands, to New Zealand, or somewhere else to get the material, so must it be, but I must find the thing that will make what fashion demands, otherwise, while I am trying to prove to the people I ought to do it out of American wool this particular fashion will be gone, and I will have lost my opportunity. That is one of the reasons why Americans must go elsewhere to find certain wools, not merely that they may supplement the American clip, but to find the wools adapted to the calls made upon them by certain phases of demand.

Why should he go to London, is another question and is answered by the statement that until very lately London has been the point at which the largest quantities of wool grown in many places in the world, outside of the United States, could be found. At a given time all the wools of South Africa, a little from North Africa, wools from the Australian colonies, from the Falkland Islands, from the extreme southern part of South America, are to be found on sale in London, except what may be sold at auction in Australia. There remain then to consider only the carpet wools, which are brought into this country directly, because this is such an important carpet manufacturing centre, and the wools that are grown in the central part of South America, which are largely marketed from there, some of them being sold at Liverpool as are some of the carpet wools.

But one must go somewhere abroad to find the quantity of wool that supplements the American clip; and this, naturally, for many years gravitated to London. The larger part of these wools has been on sale in London for about fifty years, a period merely coincident with the existence of the London auctions. The bulk of the wool on sale at London has been from the Australian colonies.

It is difficult to say when the Australian continent was discovered, and the first trace of the island continent I can find is on a globe made in Nuremberg in 1492. About 1830 the government of Great Britain selected a place in Australia as a point to which were deported the criminals that were sent out of the country for their country's good; that place was Botany Bay, on which grew up the town of Sydney. About 1837, among the exports from the growing country, wool was sent from Botany bay to London and there put on sale. That accounts for the fact that the habit still prevails of calling those very fine Australian wools "Botany wools," and calling their products, in yarn, "Botany yarns."

You can understand how the centering of the sale of the wool in auctions in London gradually controlled the development of the clip. England at that time was the great manufacturing center of the world. France was the only country that was at all her rival, so that the consumption of these wools, which were practically all fine, centered largely in England. It was, of course, the most convenient arrangement that coud be devised, for the growers of the wool to consign their wool to London for sale, as London was the financial center of the world and necessary financial advances, which are the breath of life to the wool grower, could be obtained from the London banks.

The auction sales gradually grew into a strictly business proposition. One of the most perfect schemes for the disposition of a product that man has ever devised probably is this arrangement of selling wools at London by auction.

As London was the financial center and so naturally controlled the product of the British colonies, branch banks were established in the colonies, and there grew up a close financial relation between the banker and the wool growing population. It came naturally about that the thing to do in handling a large clip was to send it down to the port of Sydney or Melbourne, which we know as Port Philip, and there make arrangements with the local bankers, who represented the London bankers, to get the large advances which were necessary, and let the wool take its course for sale in London. The final adjustment of the balance was made through the local banks, the balance to be paid to the grower—if he had any balance. As a rule this arrangement has been entirely satisfactory.

Gradually other countries than England and France went into the manufacture of fine woolen goods, made out of something finer than English wool, and Australia began to sell at home. Twenty-five years ago the London management of the Australian clip was absolute and undisputed. When I first went to London to attend auction sales and buy wool there, I had no more thought of going to Australia to supplement or replace the London auction, than you have now of going to Japan to buy wool. At that time about 70 per cent. of the Australian product was handled in London, and the other part of the product, which was handled at home, was largely made up of all descriptions of less useful or less valuable wool, scoured on the spot and sold and transported without cost as to its dirt and grease.

You will see from the statements I shall make to you now that the situation has been almost reversed. In the season of 1885-86 the Australian product was about one million, one hundred and forty-one thousand bales. Of that over 68 per cent., practically 70 per cent., was sold in London and the balance in Australia; in 1894-95, when they had the greatest production they have ever had in the colonies, one million, nine hundred and fifty-two thousand bales, 55 per cent. was sold in London and the balance sold in Australia. The Australian auctions have grown so rapidly in importance that in 1903-04, when the clip fell to one million, three hundred and seventy-five thousand bales, only 40 per cent. was sold in London, Australia handling 60 per cent. of the clip. By Australia I mean here to include Tasmania and New Zealand. The season just finished, 1907-08, ended in February, because of an arrangement entered into something over a year ago to distribute the Australian sales over a little longer period, which they thought was to their benefit. During this season, when the clip had again risen to nearly its former high level, only 30 per cent. went to London and the balance was disposed of at home. So the London auctions, which we shall speak about tonight, do not play, as you will see, anything like the important part they once did in the distribution of the Australian clip.

Of the product of that great year, 1894-95, it may be interesting to note what the Australian colonies produced. Tasmania produced 1 per cent.; West Australia, 1 per cent.; Queensland, 7 per cent.; Adelaide, 9 per cent.; New Zealand, 18 per cent.; Victoria (Port Philip wools), about 25 per cent.; New South Wales (Sydney wools), 39 per cent. So you see the most important part of Australia for wool growing are the states of New South Wales and Victoria. It is interesting to notice the disposition of the product of this last year, the season of 1907-08. England took 47 per cent.; France and Belgium, 34 per cent.; Germany, Austria, Switzerland and Italy, classed together, sixteen per cent.; the United States, 2 per cent.; Japan and the East, 1 per cent.

For the reason that our very bright friends, the brokers there, who follow the situation, recognize as all the wool people do recognize, the class they call staple or American wools are always the highest priced. So on the first day of the London series it is the rare exception to find any wool that can be brought here. The reason is this: If there is a decline and "nothing suitable for America," why, on Wednesday, tomorrow or the next day, the staple wools for America may gradually appear, and, if the American demand is at all vigorous as it usually is, there is a probability that such sales will help to raise prices of other grades.

As a rule we are not apt to figure on the relation between a decline in London and the effect of that decline in America. The decline, say of 10 per cent., is on the London selling price. To bring your wool here you pay 11 cents duty, no matter what the condition of the London market is. So the decline here is never as much as it is there. For example, if London wool is selling at 12 pence it would cost landed here 37 1/2 cents, after paying the duty and all expenses. A 5 per cent. decline on that 12 pence would bring it down to 11 pence half-penny. Wool costing 11 1/2 pence in London costs 36 1/2 cents landed here. The real decline is from 37 1/2 to 36 1/2 cents, or 1 cent, which is less than 3 per cent. of the American price. This will illustrate the point I want to make, that the wavering of the London market by

5, 10 or 15 per cent. is not followed by the same wavering of the market here, because the duty of 11 cents always remains a stable factor.

The first thing you will find when you go to a London broker with whom you are going to place orders, is that he has a small circular showing that on Tuesday, Wednesday and Thursday, and possibly later, there will be sold certain clips, Adelaide, Sydney, etc. The clips sold on these successive days will be shown on this circular by their respective brands.

Upon going to the warehouses, you will find that the top floors had all been prepared with tiers of wool, three square bales high, arranged with alleys between

I have here a catalogue of sales that took place on Wednesday, December 4, 1907, for which the wools were put up by two parties; one sold 571 lots, 6,433 bales, and the other sold 487 lots, making 6,432 bales. A total of 12,865 bales of wool are to be sold, say tomorrow morning, and there are a thousand lots of the specimen you have in hand. The wools are Port Philip wools, and "Coree" is given as the brand of that clip. "Lot 48, in grease super combing H, 1 bale extra combing H, tares 12, 23 bales in the lot." This page illustrates the care with which the wools in Australia are classed and arranged so that a man need only buy what he wants.

When you have a catalogue made up on that plan you know that some of the wool you are not going to look at. As an American you have no interest in lots from 63 on.

Upon arriving at the top floor you leave your coat and hat with an attendant, and put on a smock-coat which will cover you to the feet so you will be absolutely preserved from dust and dirt. With your catalogue you will travel along these alleys, pick out the lots you think will interest you and make your memoranda. You say, for example, that lot 48 is all right for quality for you, that it is long enough and sound enough for your purpose, etc. The first thing to do is to make up your mind how much of it will not be there when scoured. What will it shrink? And so you go on through the whole of the thousand lots, leaving, of course, a great many you don't care anything about. Probably by 12 o'clock you will have tramped around the warehouse and will have made up a list of what you think will suit your purposes, which you hope you may be able to buy at prices you have marked.

About noon you go back with your broker to his office and figure out what work you have done, and you make out a list of what lots you want to buy and what you can pay for them. A bidding broker is a man who serves oftentimes two or three or four of the buying brokers, who has clerks around him, and who does nothing else but handle the bids in the auction. The selling broker is on what we call a rostrum, and on each side are the clerks, so all the data may be made in duplicate and nobody will have a chance to say a clerk made a mistake, as the reports of the two clerks must correspond.

The sale goes on from 4 until 6 p. m. By that time everything will be sold except those lots marked with a star, anything of three bales or less, called the "star lots." After the brokers have gone away their clerks have a little circus of their own selling these lots. And in that they differ from the method sometimes followed in this country. In London it is the sharpest wits of buyers and sellers that are concerned with handling the wool. Here it is too often the case that a boy graduates from the offices into buying wool in the west, etc., and he gets his education at the expense of the employer. The only commendable thing about it is the man who sends him out to get his education does pay the expense.

When the day's work is over you are at liberty to go back to your broker's office and examine the memoranda of what you bought and what you paid for it. After attending to your correspondence, if everything is favorable you get through with your work and get back to your hotel about 8 o'clock. You take home with you the catalogue for tomorrow. You don't want many evening engagements if you are going to be called for work again at 5.30 tomorrow morning. You probably will want to take a little rest and be ready for the next day's work. Twenty five years ago when there

were only four sales in the year they ran for three or four weeks, and you did not know what was going to come up through the week and never knew whether it was safe to go away for a day, because the day you would go away might be a day when the market would slump a little.

The terms on which these wools are sold are plainly printed on the front page of these catalogues every day. You can read over these terms and read exactly what you are required to do, just when you must pay for the wool, just when you can take it away, etc. You have fourteen days in which to get it away. But it never gets away from the warehouse until the cash is in possession of the seller. There is no credit to the business at all so far as the seller and warehouse are concerned. The banks do the credit business over there, and I would be devoutly thankful if the bankers did all the credit business here. One of the most distressing things to my mind is the fact that so many woolen manufacturers have to be bankers for their customers. Witness the terms on which the goods are sold. It is a most deplorable situation that the manufacturers of woolen and worsted goods of this country are largely bankers for the people who consume the goods.

The wool is taken in and weighed. It goes into these warehouses, usually along the Thames, and lies there until the day of the sale, and it doesn't lie on the top floor either. The top floor is reserved for sale days and other purposes. It is apt to lie close to the ground or under the ground. All the wool you and I have picked out and thrown on the floor in looking into the bales must be picked up and put back again in the bale and the cut part of the bale sewed up. The stevedores are not experts and they may get something in the bales you do not buy, but according to the conditions of the sale you do not have recourse. They will be weighed up, but never at more than the weight at which they came in, and the extra goes to the warehouse keeper. That is the rule. You haven't anything to say about that either.

It is not necessary for me to say anything at length as to the desirability and possibility of selling wools at auction in this country. In 1904, in January, I was sent by the National Association of Woolen Manufacturers to Portland, Oregon, to spend a little time at a joint meeting of the National Association of Wool Growers and National Live Stock Association. I stopped in Chicago and was asked by the people of the stock yards to consider a proposition of selling wool here at auction. In my report to the National Association of Woolen Manufacturers (March Bulletin), 1904, will be found what I thought of that subject.

There is no doubt but that the American wool grower could sell wool at auction if he would employ competent classifiers to put up his wool, as two or three men whom I know do now; if he would establish a classification approximately like this; and if it was understood that he would brand his clip so that the buyers who went there could hold him responsible; if there was anything like the penalties in this country for false packing that are enforced in Australia, where you can follow the man for months and years after he has falsified packing of his wool, and collect damages; if that sort of thing ever came about in this country it might be possible to establish the sale of American wools at auction. Until you can get something like that it seems to me that the task is going to be very difficult. (Applause.)

Calais has 400 establishments for the manufacture of lace, employing 3,000 machines. The value of the lace sold to the United States in 1906 was $7,420,610, an increase of 2 1/2 millions over the previous year.

In 1867 the imports of raw silk into the United States are given as 491,983 pounds, valued at $2,469,001; in 1907, forty years later, they are given as 16,722,307 pounds, valued at $70,229,518.

The imports of raw silk into the United States for the year ending June 30, 1907, amounted, in round numbers, to 16 millions of pounds, of which 9 millions came from Japan, 3 millions from Italy, and 2 millions from China.

NATIONAL ASSOCIATION OF COTTON MANUFACTURERS.

The annual meeting will be held at Huntington Hall in the Massachusetts Institute of Technology Building, Boston, on Thursday and Friday, April 16 and 17. In our last issue we printed a list of the subjects to be discussed. Some of these are very timely and should receive more than placid attention.

The tendency of the meetings of late has been for too little discussion and it is to be hoped that the members will take more active interest in this session, not only by giving careful hearing to the papers, but by entering into discussion afterwards.

There is no reason why these technical papers should not receive the same active and spirited discussion that follows the presentation of papers of the American Society of Mechanical Engineers or the various chemical societies.

Many of the members of the National Association of Cotton Manufacturers are good speakers and when men are familiar with their subjects, as most of them are, there should be no hesitation in entering into discussion. If these meetings are to be simply social gatherings they still fulfill a commendable purpose, because there is nothing that is more helpful to the trade than for its various members to get acquainted and meet occasionally at gatherings of this kind, but if the technical side is to be kept vitally alive there should be something more than mere reading of the papers, which are already in print and which members feel that they can read at their leisure either in pamphlet form or in the columns of the trade papers afterwards. Live, keen discussion will draw them into the assembly room and keep them there as interested participants.

For the season of 1906-7 the United States bought 115,565 bales of Egyptian cotton, 46,087 bales more than the previous season.

The cotton exports from Egypt during the season 1906-7 show a total of 922,808 bales. This is an increase over the previous season of 124,793 bales.

THE AMERICAN COTTON MANUFACTURERS' ASSOCIATION.

The Twelfth Annual Convention is to be held at Richmond, Va., May 20 and 21. The headquarters will be at Jefferson Hotel, business sessions being held in the Convention Hall of that building.

Plans are being made by the local entertainment committee which will insure a royal welcome and most cordial hospitality. Papers are expected on the following subjects:

New Methods of Manipulating Yarns.
The Work of Textile Schools.
The Oil Storage System.
A New Cotton Gin.
The Cotton Mill in the Cotton Field.
Inland Waterways.
The Tariff.
Cotton Goods Trade in the Orient.
Banking and Currency.
Bleaching and Finishing Goods in the South.
Modern Methods of Merchandising.

An invitation has been extended to the Honorable Wm. H. Taft to attend the Convention, and it is hoped that he may accept.

Members are recommended to make early engagement of rooms at the hotel and for that purpose to write direct.

Most manufacturers are lacking the excuse of want of time to attend this Convention and when business is depressed it is more desirable that they get together with a view of doing everything possible to once more restore profitable trade conditions.

RESULTS.

In my December trip South I saw two weavers each running 48 Northrop print looms assisted by one child each not paid by the mill. As the small help might have earned wages by doffing or spinning, it is fair to consider their possible wages as a part of the weaver's earnings; but the fact proved that one weaver can piece up warp and remove cloth for 48 Northrop looms besides attending to the various oversight and adjustment within a weaver's province.

The goods were 64 by 60, the cuts were 55 yards, the loom speed 186, the hours 62.

I looked up the weaving records and saw that the production was as follows for the months of October and November:

	Henry Strong	Jim Berger
14 days Oct.	565 cuts	647
13 days Oct.	483	552
12 days Nov.	511	486
12 days Nov.	552	509
51	2111	2194
	41 cuts per day	43 cuts per day.

The price paid for weaving was 7 cents per cut—note the length of the cuts. Fall River pays 23.96 cents on common looms for cuts considerably less in length.—George Otis Draper in Cotton Chats.

THE WAREHOUSING OF COTTON.

From an address by W. D. Nesbitt, Birmingham, Ala., before the Southern Cotton Association, at Dallas, Texas.

On account of a lack in the proper baling, warehousing and transporting of this product valued annually at $700,000,000, the annual loss is more than 17 1/2 million dollars.

Taking as a basis for calculation the value of a bale of cotton at $60 or 12 cents per pound, the following startling losses, under present methods, confront us and cry out against a system that is responsible for them:

The average insurance on stored cotton in public places throughout the South is more than 3 per cent. per annum. Properly protected warehouses have insurance at less than 1/10 of 1 per cent. per annum. Some 6,000,000 bales of cotton are yearly stored for a period of about four months, in the course of their movement to the mills. About 7,000,000 bales are exported each year. About 2,000,000 bales are damaged more or less each season while lying on the ground either in the town or country and being subjected to rain, wind, heat and cold. These conditions levy an extra and unnecessary insurance tax on cotton each year of some $3,480,000.

On seven million bales exported, country damage insurance is paid to the extent of some $1,250,000.

Rotten and damaged cotton picked from two million bales left unprotected, amounts to some $4,800,000.

Evaporation of the oil in the cotton fiber, and the consequent "fly" in the mill, induced by the brittleness of the staple on some four million bales, allowed to become wet and dry and exposed to heat and cold, averages about eight pounds to the bale, or $3,800,000.

On account of the bad baling and covering and bulky character of our package, we pay excess ocean freights on about seven million bales, amounting to $4,200,000.

We thus have annual losses amounting to more than $17,500,000, every dollar of which could be saved by more care and better methods in baling, storing and transporting.

These figures, representing as they do, 10 per cent. on an investment of $170,000,000, tell a story of wanton waste that is sickening.

REMEDY PROPOSED.

Such conditions could not have existed had there been competition in the production of cotton. Such competition would have compelled a care essential to continued existence. The truth is, that we are the victims of our own strength. The natural fertility and adaptability of our lands to cotton culture has produced for us from cotton growth, wealth, in spite of waste.

Surely the time has arrived when we are to stop this waste and keep in the South this enormous amount that we have yearly, in the past, paid as a tribute to indifference.

FIXING RESPONSIBILITY.

The farmers and the cotton handling public have recognized this and tremendous improvement has been made in the past four years. Many good warehouses have been built in Texas; improved methods have been adopted in Memphis, Augusta, Birmingham and Baltimore, and in my state of Alabama the Farmers' Union has more than 50 warehouses, some of which are well constructed, but the majority are of light construction and produce heavy fire risks.

There has not yet been the proper development of the theory of systematic ware-

housing so necessary if the system is to serve to the full limit of its possibilities.

WAREHOUSE SYSTEM.

The development of the perfected warehousing system in this country must be by successive steps.

It is claimed that the producers can, or should, successfully bind themselves to sell their cotton at or above a certain figure. My judgment has always been that such an arrangement would necessarily become top-heavy, since the facilities were not at hand to carry out by the producers this plan, except at extreme cost to the holder. My judgment has been and still is, that every energy should be bent to securing facilities by which the owner of cotton can carry such cotton safely and at reasonable cost and without deterioration and can borrow money on it if desired, until, in his judgment, the time is propitious for selling. When this basis is laid, trade conditions, from time to time, can be studied by the individual or the association of individuals and their judgment as to the best time for the sale of their cotton exercised at their discretion.

The other theory with which I have disagreed, and still do, is the one which many of our farmer friends have held to, that they should build small warehouses at various stations, rather than build large warehouses at certain centers. The error of this theory is two-fold:

First, the amount of cotton to be handled or stored at the smaller points is not sufficient to insure a return upon capital necessary to build that class of warehouses which can secure the cheapest insurance and least cost of operation.

Second, in selling cotton the small warehouse is at a disadvantage in that it is far removed from commercial centers and is not easily accessible to the buyers of cotton. The small amount of cotton on hand at any one time is such as to make it hard for the buyer to secure the amount and grades desired. These conditions, with others necessarily attached to handling in a small way, result in the net price obtained at smaller points being less than the price possible at the commercial centers. At the latter centers accumulated cotton is handled in large quantities at a small cost per bale, is under the cheapest insurance and can be offered more advantageously to the buyer in large lines of even running grades.

FLAX IN EUROPE AND AMERICA.

BY ARTHUR D. LITTLE, Chemical Engineer, Boston.

(From a paper read before the Society of Chemical Industry.)

The world's crop of flaxseed is about 100,000,000 bushels, of which the United States produces roughly 27,000,000, Argentine 30,000,000, Russia 20,000,000, and British India 20,000,000. The world's crop of fiber is somewhat under one and a half billion pounds, with the United States and Argentine producing none, whereas Russia alone may be credited with over one billion pounds.

The idea is general among growers of flax that the same plant cannot be made to produce good seed and good fiber, and this is the argument commonly advanced in explanation of our own failure to produce fiber. There is evidence in plenty to controvert this opinion except in so far as it is undoubtedly true that to secure the very softest and finest fiber the stalks should be pulled before the seed is fully ripe. The average straw from which the Russian peasants supply the world with linen is far inferior in quality and length of fiber to that produced in our own northwest and burned to the extent of millions of tons each year.

Despite the great area grown to flax in this country for seed which has in recent years reached 3,700,000 acres, there is no such thing as a proper flax culture here or in Canada. The crop is everywhere a side issue, planted perhaps because it was too late for anything else, or more often merely to break in wild lands. Therefore the crop is a shifting and unstable one which capital and machinery cannot easily follow. It must be made permanent and regular before any great development of fiber industries can be expected.

Furthermore, and this of course is fatal to any utilization of the flax for line fiber, it is

the universal practice in the United States to separate the seed from the straw by putting the plant through ordinary threshing machines which leave the straw cut, tangled and worthless for fiber purposes. Some attempt is being made in Canada and Michigan to pull or at least cut the straw close to the ground, and to separate the seed by methods which leave the straw straight and whole.

Quite the contrary conditions exist in Europe where for generations flax in proper rotation with other crops has been one of the most useful and valued staples. To its cultivation is there brought the intelligent experience of centuries and an amount of care and labor which are out of the question here.

In Europe the flax is universally pulled from the ground, the proper time being when the stalks and lower leaves begin to turn yellow. It must be pulled to secure the best results, otherwise three to four inches of the best fiber is lost and the remainder does not work into sliver as well where the ends are cut square off.

In European practice the first step in the preparation of the pulled flax is the operation known as rippling, in which the whole plant is drawn through a coarse comb placed with the teeth upright. The object of this step is to remove the seed capsules, lateral branches, and leaves, leaving straight, clean stems.

The adhesion of the bast to the woody portion of the stem known as shive is overcome by the process of retting. This is a fermentative process due to the action of a fission fungus of rather large species occurring in the form of rods. It is anaerobic despite the fact that retting may be accomplished, as in dew retting, by spreading the stalks in rows over meadows. Dew retting requires about two weeks in good weather.

Pool retting is carried on in natural or artificial ponds, one 30 by 40 by 10 being enough for the product of one acre. The sheaves of straw are packed loosely, slightly inclined to bring the root ends on the bottom, covered with straw or sods with the grass side down, and weighted down with stones. Under these conditions fermentation soon sets in accompanied by the evolution of gases and the development of a pronounced stench. From five to ten days are required to complete the fermentation, and great care is necessary in order that the fiber be not injured by over-retting. The proper time for removal of the straw from the retting pool is determined by the readiness with which inspected stalks separate into fiber and wood on being drawn between the thumb and finger.

The best flax in the world is that from the celebrated Courtrai district of Belgium. Here the retting is carried on in the almost stagnant waters of the little river Lys. From 2,000 to 3,000 pounds of straw is packed in sheaves placed end for end in large open crates about 12 ft. square and 3 ft. high. Burlap is first placed around the sides to prevent the entrance of dirt. The crates are drawn out into the stream and sunk by weighting with stones. After a period varying from four to fifteen days dependent on temperature and other conditions governing the progress of the retting, the crates are drawn up on wooden runways on the river bank by hand capstans located at frequent intervals along the shore. The sheaves, each of which is held together by being tied at one end, are lifted out and opened into little A-tents, in which condition they are left standing in the fields to dry. The boys who do this work develop great dexterity, particularly in the operation of picking up the standing sheaf and quickly reversing it so that what was before the inside has an opportunity to dry. In Belgium practice it is deemed preferable to repeat the retting if necessary two or three times rather than to attempt its completion in one operation.

The next step in the preparation of the dry flax is that of breaking, and has for its object the initial separation of the woody shive from the fiber. This is done by sharply bending the stalk at many points and the operation is conducted either by hand or by machine. In the hand break the straw is brought under a rather sharply grooved lever which engages the sharp edges of several parallel strips of wood over which the flax is held. Machine breaks are merely sets

of corrugated rollers between which the straw is passed.

The broken straw is next scutched by hand or by machine to divide the filaments into finer fiber and to complete the removal of the shive and eliminate the short, tangled fiber in the form of tow. In hand scutching the operator works with a heavy, wooden scutching knife which is not unlike a large and clumsy butcher's cleaver. This is drawn down over the tress of flax held in a slit in the block against the side of which the knife works. Machine scutching embodies the same principle, but the knives are set on the ends of revolving arms like those of a small windmill, and worked against the flax held against the wood surface.

The scutched flax next undergoes the operation known as hackling in order that the fiber bundles may be further subdivided, cleaned from tow, and drawn out straight and parallel. Hand hackling consists merely in drawing the flax through sets of coarse, upright needles. In machine hackling the needles are usually in motion and drawn through the flax which is held at one end.

Without attempting to touch upon the further treatments involving spinning and weaving, it may be said that the production of fine linen yarns and fabrics is a lost art so far as this country is concerned, and demands a degree of judgment and experience which our mill managers and operatives cannot hope to acquire without long training. The finest flax yarns are spun wet.

In view of the foregoing, and especially in face of the stupendous waste of flax fiber permitted in this country, it is not surprising that at intervals as periodical as those of financial strain, promoters have come forward with methods to turn this waste into promoters' profits if not into dividends. In the statements of their prospectus they generally ignore several fundamental facts.

First. The shifting, changing character of the crop in this country which must have a permanent locus before capital can safely be interested in large plants to treat it.

Second. The universal habit of the American farmer of mangling and destroying for textile purposes all his straw by use of the threshing machine.

Third. The aversion of our farmers and farm laborers to such back-breaking exercise as pulling flax, and the absence of any machine which will properly do this work for them.

Fourth. The absence of the necessary labor for retting, drying and preparing the flax.

Fifth. The fact that there is nothing revolutionary or even new in treating the broken flax with alkaline solutions to dissolve the poetic compounds, or in applying permanganate bleaches to the chemically retted fiber. It is easy by such methods to produce a white, good-looking fiber, but the product of this hasty procedure is not comparable to the fine line produced by the slow European methods which have the experience of centuries behind them.

As illustrative of the foregoing, a recent prospectus of an organization which is to revolutionize the American textile industry contains a number of grossly inaccurate statements. It implies for instance that in Europe the seed is necessarily sacrificed, whereas the fact of course is that immense quantities of European seed are produced along with fiber. According to this prospectus there is to be no waste by the new procedure. Seed and fiber are both to be saved, and the woody tissue is to be converted into "a fine linen paper." This statement is preposterous, as the shive has no length of fiber and no paper-making value for any sort of paper.

In spite of these many handicaps, there is little doubt that we shall gradually build up in this country a linen fiber industry. It already has its beginnings in the manufacture of tow for upholstery, flax binder twine, and some of the coarser linen fabrics. It will undoubtedly ultimately develop upon new lines involving less time and labor and permitting a more general use of machinery throughout. This utilization of our flax fiber has long been an interesting and elusive problem, and one promising great rewards, but it is always well to remember that it is usually quite as disastrous to get into a good thing too early as it is to get into it too late.

CORRESPONDENCE AND NOTES

Upon Textile Topics At Home and Abroad.

HAND DRESSING.

BY C. H. CHISHOLM.

Whatever may be said for long chain beaming and slashing as compared with hand dressing, it will be generally conceded that hand dressing is at its best for fine lustre fabrics and fancy cotton warps to be filled with worsted, mohair, alpaca and lustre yarns. On examining these goods it will be found that a warp thread occupies not more than one-third of its diameter. As the cloth is woven 4 inches wider than the finished width, and dressed 3 inches wider than the woven width, each end on warp beams will occupy one-fourth of its diameter; that is, one thread in the space that could hold four threads. This results in a very thin sheet. Fine cotton threads tend to cling together, pile up and fall into low points on the beam, making what is called a "ridgy" loom beam.

To make fine lustre goods perfect, an absolutely level beam is essential. A ridgy beam will deliver tight and slack threads in the loom, and the goods will show warp threads running in groups. Instead of the warp threads running parallel they will look like a net. This result is more than probable with a slashed warp, but conditions make it almost impossible in hand dressing. The front of dressing frame carries the loom beam and drive. Fastened to the frame in the centre, overhead, is a friction box, containing free and fixed cross bars. A back stand is 10 to 20 feet in the rear. This stand holds several cross bars and a cross roll. Between this roll and the loom beam the operator works with the reed in hand. Around these frames is the shipping rope. With the above machine there is scarcely a design so complicated, a contrast in yarns so extreme, that it cannot be put on the loom beam and made to run well in the loom.

I do not underestimate the value of a slasher. On the contrary I have demonstrated some unusual results in slashing fancy warps, but the slasher is a long way short of being able to handle silk and carpet yarn in the same warp.

Orders are received from the office in the following form:

Quality No. 36-in. goods, 2,000 ends, 2/80 C. P., style 1, No. 10 shade, 6 warps, 10 cuts, 72 yards—style 2, No. 20 shade, 8 warps, 10 cuts, 72 yards.

A record of all details is made on the quality card, and orders on dye house are filed as above. An order is given to warper for 4 beams 500 ends, 10,080 yards, 2/80 C. P. and a credit entered on stock card for pounds assigned.

On the same order instructions are given for doubling as follows: 14 warps, 2,000 ends, 10 cuts, 72 yards each, cut marks. When finished this is sent to the dye house. On being returned to the dressing room 1,000 ends are counted off, and the warps are ready to be dressed.

The dresser on receiving his warp by lot proceeds to split to the half making 2 coils. Putting the coils under the friction box, taking top end of each coil or chain, passing through friction box, and carrying back and putting around top bar of back stands, bringing warp ends forward and again around a front bar, returning to back, passing each chain around different bars, are the successive operations. The warp is held spread by notches in these bars, the whole passing around a roll. At this point the dresser puts in lease rods in each strand. The reed is then selected for the width wanted. The dresser then sleys 2 threads in a dent, 1 thread from each of the 2 pairs of rods, after which the warp is fastened to the loom beam. The friction box bars are ad-

justed. On finishing the warp a lease is taken. The separating rod which the dresser carries fastened to his reed keeping strands separate, gives a half lease. The other half lease is taken by picking up each of the bottom threads. There are many details not mentioned in this brief sketch of hand dressing. An intelligent and "nifty" man is needed to meet all the conditions in fancy hand dressing.

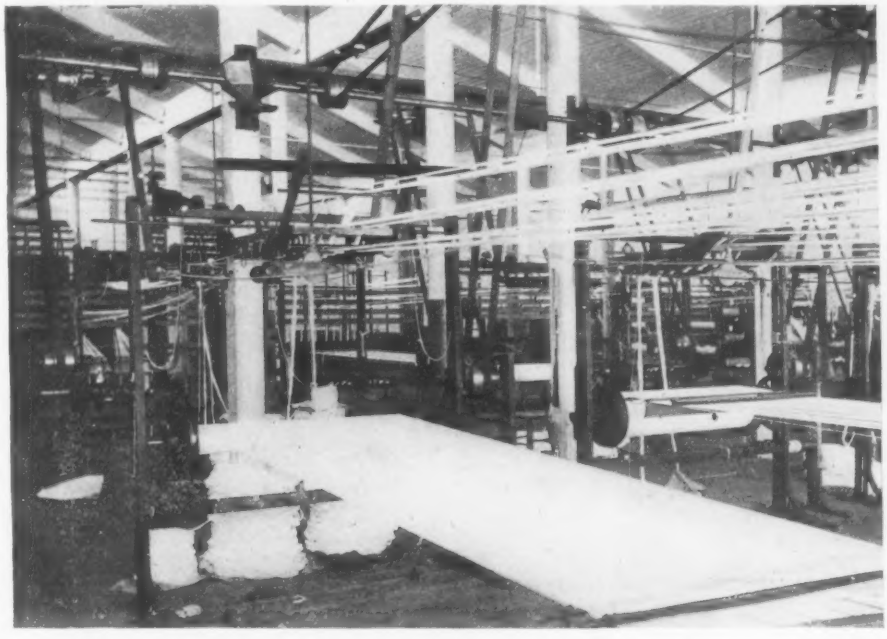


FIG. 1.

Suppose on receiving the above order there are warps on hand as follow 1,500 ends and 1,334 ends, 720 yards. The order to the dye house would be 8 warps of 1,500 ends for No. 10 shade; 12 warps of 1,334 ends for No. 20 shade. These are taken from stock and forwarded to the dye house. On being returned to the dressing room color No. 10 would be prepared as follows: 8 warps count for bit of 500 ends from each, thus: 8 warps, 1,000 ends and 8 warps 500 making 4 warps dressed as before and 2 warps from 4 pair of rods. Color No. 20 count, and split 4 warps 667 ends making 8 bits each. Each dresser would get 1 warp of 1,334 ends and a bit of 667. Then he would split from 1,334 ends warp 334 bit, sleying 2 in a dent from 3 pair of rods as follows:

1st pair of rods,	1,000 threads	1 1 1
2d pair of rods,	667 threads	1 1
3d pair of rods,	334 threads	1

It might happen that the warp on hand will not combine to make up uniform sets. It will then be necessary to prepare in the grey, counting, splitting and perhaps dressing. It is essential in lone colored warps that no yarns of different sets are put in the same warp. In matching colors dyers agree that the apparent is very unreliable and that friction in dressing and weaving will sometimes develop distinctly different shading in warps of the same color but mixed sets. In fancy warps it is possible to manipulate so as to avoid contrasts.

Orders for various styles using the same yarn for fancy plaids, such as Scotch plaids, may be colored in separate lots of 1,000 pounds or less, splitting each color to meet all designs in fancy yarns. Overlines are frequently dressed on a reel, pulled off, and delivered to dresser with the warp. When

overlines go into both filling and warp, the yarn will be colored in the chain, and split to meet requirements. The filling is quilled.

The foregoing will suggest to the reader that a hand dressing department is run on a basis of expedients and compromises. The best that can be said of slashed warps is that they are as good as hand dressed warps. The cost is the crucial feature. I herewith submit comparative cost. Warping is common to both processes, so need not be included for comparison. Taking the above order for 140 cuts, the cost for long chain beaming, slashing, doubling, hand dressing and weaving are as follows:

						Relative percentages	
Chain Beaming 4 beams 5760 yds. 4 " 4320 "	$10.08	140 cuts $12.60	1 cut (72 yds.). 09	1 yd. 00133	...	5	27.5
Slashing 560 lbs. and putting in 2 sets	2.52						
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BY LEO PINAGEL.

Director of the Conditioning House at Aachen Germany.

(In das Deutsche Woolen Gewerbe.)

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E	25	75	110.62	10.62
F	30	70	111.05	11.05
G	35	65	111.47	11.47
H	40	60	111.90	11.90
I	45	55	112.32	12.32
J	50	50	112.75	12.75
K	55	45	113.17	13.17
L	60	40	113.60	13.60
M	65	35	114.02	14.02
N	70	30	114.45	14.45
O	75	25	114.87	14.87
P	80	20	115.30	15.30
Q	85	15	115.72	15.72
R	90	10	116.15	16.15
S	95	5	116.57	16.57

Mixture A gives a regain of 8.92 per cent.; the amount increases until for mixture S it is 16.57 per cent. The average regain for the nineteen mixtures is 12.75 per cent., which is 2.75 per cent. higher than the legal standard.

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185	12.944

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Omitting the third test, the result of which is open to some doubt, the average moisture in the white worsted yarn is 11.04 per cent.; in the mixed yarn 11.16 per cent.; the average of both being 11.28 per cent. This is 1.28 per cent. above the official standard, but

CORRESPONDENCE AND NOTES

Upon Textile Topics At Home and Abroad.

HAND DRESSING.

BY C. H. CHISHOLM.

Whatever may be said for long chain beaming and slashing as compared with hand dressing, it will be generally conceded that hand dressing is at its best for fine lustre fabrics and fancy cotton warps to be filled with worsted, mohair, alpaca and lustre yarns. On examining these goods it will be found that a warp thread occupies not more than one-third of its diameter. As the cloth is woven 4 inches wider than the finished width, and dressed 3 inches wider than the woven width, each end on warp beams will occupy one-fourth of its diameter; that is, one thread in the space that could hold four threads. This results in a very thin sheet. Fine cotton threads tend to cling together, pile up and fall into low points on the beam, making what is called a "ridgy" loom beam.

To make fine lustre goods perfect, an absolutely level beam is essential. A ridgy beam will deliver tight and slack threads in the loom, and the goods will show warp threads running in groups. Instead of the warp threads running parallel they will look like a net. This result is more than probable with a slashed warp, but conditions make it almost impossible in hand dressing. The front of dressing frame carries the loom beam and drive. Fastened to the frame in the centre, overhead, is a friction box, containing free and fixed cross bars. A back stand is 10 to 20 feet in the rear. This stand holds several cross bars and a cross roll. Between this roll and the loom beam the operator works with the reed in hand. Around these frames is the shipping rope. With the above machine there is scarcely a design so complicated, a contrast in yarns so extreme, that it cannot be put on the loom beam and made to run well in the loom.

I do not underestimate the value of a slasher. On the contrary I have demonstrated some unusual results in slashing fancy warps, but the slasher is a long way short of being able to handle silk and carpet yarn in the same warp.

Orders are received from the office in the following form:

Quality No. 36-in. goods, 2,000 ends, 2/80 C. P., style 1, No. 10 shade, 6 warps, 10 cuts, 72 yards—style 2, No. 20 shade, 8 warps, 10 cuts, 72 yards.

A record of all details is made on the quality card, and orders on dye house are filed as above. An order is given to warper for 4 beams 500 ends, 10,080 yards, 2/80 C. P. and a credit entered on stock card for pounds assigned.

On the same order instructions are given for doubling as follows: 14 warps, 2,000 ends, 10 cuts, 72 yards each, cut marks. When finished this is sent to the dye house. On being returned to the dressing room 1,000 ends are counted off, and the warps are ready to be dressed.

The dresser on receiving his warp by lot proceeds to split to the half making 2 coils. Putting the coils under the friction box, taking top end of each coil or chain, passing through friction box, and carrying back and putting around top bar of back stands, bringing warp ends forward and again around a front bar, returning to back, passing each chain around different bars, are the successive operations. The warp is held spread by notches in these bars, the whole passing around a roll. At this point the dresser puts in lease rods in each strand. The reed is then selected for the width wanted. The dresser then sleys 2 threads in a dent, 1 thread from each of the 2 pairs of rods, after which the warp is fastened to the loom beam. The friction box bars are ad-

justed. On finishing the warp a lease is taken. The separating rod which the dresser carries fastened to his reed keeping strands separate, gives a half lease. The other half lease is taken by picking up each of the bottom threads. There are many details not mentioned in this brief sketch of hand dressing. An intelligent and "nifty" man is needed to meet all the conditions in fancy hand dressing.

ends warp 334 bit, sleying 2 in a dent from 3 pair of rods as follows:

1st pair of rods,	1,000 threads	1 1 1
2d pair of rods,	667 threads	1 1
3d pair of rods,	334 threads	1

It might happen that the warp on hand will not combine to make up uniform sets. It will then be necessary to prepare in the grey, counting, splitting and perhaps dressing. It is essential in lone colored warps that no yarns of different sets are put in the same warp. In matching colors dyers agree that the apparent is very unreliable and that friction in dressing and weaving will sometimes develop distinctly different shading in warps of the same color but mixed sets. In fancy warps it is possible to manipulate so as to avoid contrasts.

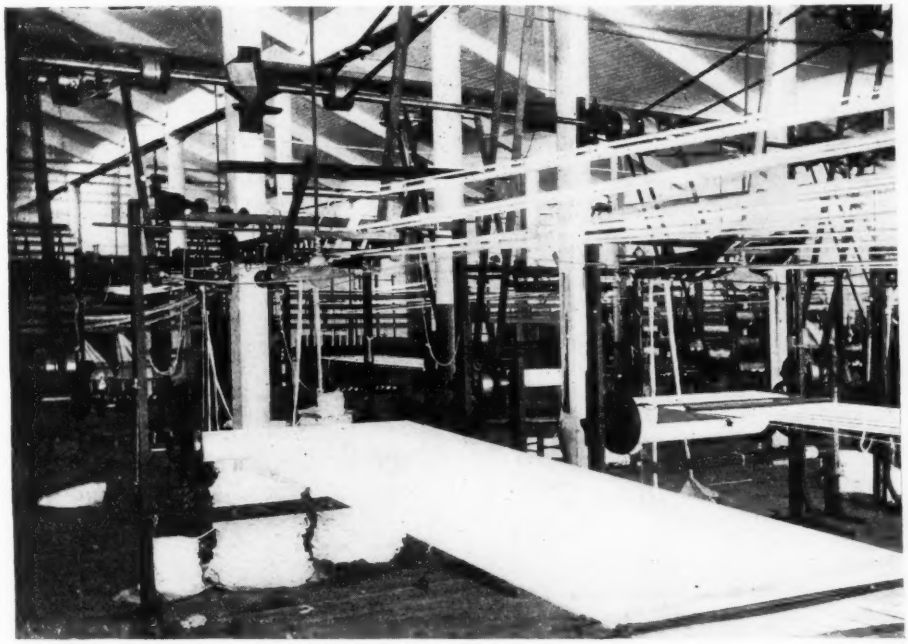

FIG. 1.

Suppose on receiving the above order there are warps on hand as follow 1,500 ends and 1,334 ends, 720 yards. The order to the dye house would be 8 warps of 1,500 ends for No. 10 shade; 12 warps of 1,334 ends for No. 20 shade. These are taken from stock and forwarded to the dye house. On being returned to the dressing room color No. 10 would be prepared as follows: 8 warps count for bit of 500 ends from each, thus: 8 warps, 1,000 ends and 8 warps 500 making 4 warps dressed as before and 2 warps from 4 pair of rods. Color No. 20 count, and split 4 warps 667 ends making 8 bits each. Each dresser would get 1 warp of 1,334 ends and a bit of 667. Then he would split from 1,334

Orders for various styles using the same yarn for fancy plaids, such as Scotch plaids, may be colored in separate lots of 1,000 pounds or less, splitting each color to meet all designs in fancy yarns. Overlines are frequently dressed on a reel, pulled off, and delivered to dresser with the warp. When

overlines go into both filling and warp, the yarn will be colored in the chain, and split to meet requirements. The filling is quilled.

The foregoing will suggest to the reader that a hand dressing department is run on a basis of expedients and compromises. The best that can be said of slashed warps is that they are as good as hand dressed warps. The cost is the crucial feature. I herewith submit comparative cost. Warping is common to both processes, so need not be included for comparison. Taking the above order for 140 cuts, the cost for long chain beaming, slashing, doubling, hand dressing and weaving are as follows:

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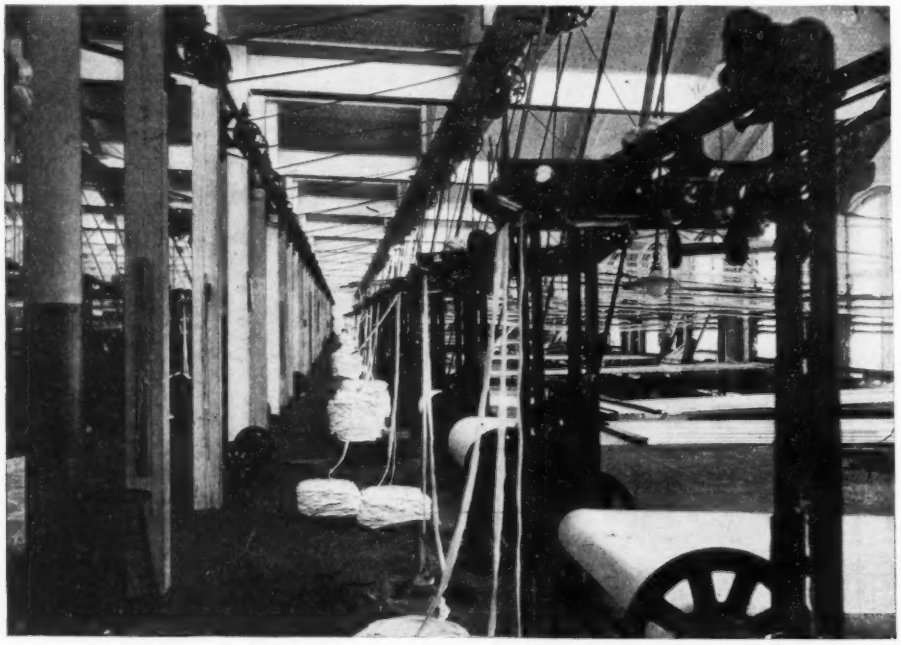

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Omitting the third test, the result of which is open to some doubt, the average moisture in the white worsted yarn is 11.04 per cent.; in the mixed yarn 11.16 per cent.; the average of both being 11.28 per cent. This is 1.28 per cent. above the official standard, but

is 1.47 per cent. under the average indicated in the first table.

The standard of moisture for scoured shoddy is 17 per cent. As shoddy ordinarily contains oil, the moisture as well as the oil is of varying quantity. In addition, shoddy contains more or less material soluble in water. Tests of various lots of shoddy in the Aachen Conditioning House gave the following results:

Samples	Moisture	Oil	Soluble materials
A	13.66	11.06	3.70
B	11.86	14.02	5.70
C	13.30	7.23	1.31
D	12.61	5.93	0.71
E	11.35	9.26	0.77
F	10.89	11.43	3.62
G	12.95	7.50	5.88

It is evident from these tests that the yield of material from a lot of shoddy depends largely upon the condition in which it is delivered to the mill. This is illustrated by comparing samples B and D. While the loss from oil and materials soluble in water amount to nearly 20 per cent. in the case of sample B, the loss from these two causes is reduced to 6 1/2 per cent. in the case of sample D. Such wide variations explain the efforts of manufacturers to protect themselves against loss, not only by reason of excessive moisture, but also because of excessive amounts of oil and other foreign materials. The wide fluctuations in the quantity of moisture, oil and other foreign materials in woolen and worsted yarn lead manufacturers to believe that the yarn they buy is frequently not spun to the indicated number. As a consequence the conditioning house is often called upon to determine the yarn number and the limits of variation for carded woolen yarn. The limits of variation have not been defined by general custom, but the following are recommended:

For white worsted yarn, 2 per cent. above and below.

For colored worsted yarn, 3 per cent. above and below.

Any variation beyond these limits should be adjusted by a corresponding change of the invoice weight. Variation within these limits are negligible.

OIL SPOTS IN WORSTED GOODS.

BY H. HIELD.

In the Dyer and Calico Printer.

All dyers of worsted goods in colors have had some annoying experience of flecked pieces and marks for which there was no apparent cause. Many of these stains occur as long marks up the center of the piece, sometimes also showing in streaks across corresponding to the cuttle edges. The cause of these arise from two factors; first the use of cheap oils in combing and spinning; and secondly in the length of time the goods frequently have to wait between weaving and dyeing.

In this country (England) a large percentage of the worsteds made are sold in the grey state, the buyers often storing them for months before dyeing. For the sake of handy storage the piece are rigged with the face side inside, and cuttled into square shape to save room. When piled in the warehouse the rig or fold where the cloth is doubled is exposed to light and variations in heat and moisture, and the result of this is that a change takes place in the composition of the oil on the exposed part.

Sometimes these marks show in the grey state, more often they do not and are invisible until after wetting on the crab. In the undyed state these marks when visible appear slightly whiter than the surrounding cloth; this of course takes on a yellow tinge when wet. They appear like places which are not thoroughly soaked with water, and occasionally have a yellow stain side by side with the white one. There seems to be no doubt that the exposed portion has its oil oxidized and rendered leathery, and so refuses entrance to the dyed liquor by acting as a resist. Blacks are generally free from these marks, but the blue and fancy shades very frequently suffer and what is worse cannot be cured.

In the early days of worsted no oil was permissible in the combing but the best Gallipol; now all grades are used, and min-

eral oil is largely employed. Animal and vegetable oils have the property of easily forming a soap, whereas mineral oils will not saponify, and can only be removed by emulsifying them with soap. On the other hand certain vegetable oils oxidize on exposure to the air, forming a leathery substance nearly like rubber, and practically insoluble in the ordinary alkalies used for scouring. It appears likely that the oils causing stains are made up of a strongly oxidized oil cheapened and let down with some mineral oil: this combination would form the stains mentioned and would be very difficult to remove by scouring.

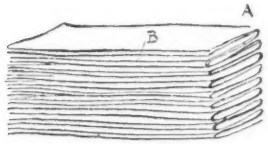


FIG. 1.

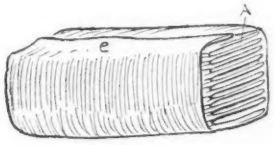


FIG. 2.

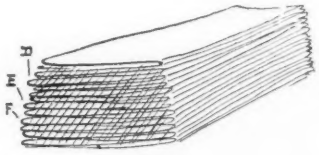


FIG. 3.

Stripping and redyeing is of no use whatever; the writer has seen cloth stripped quite down to the chromed ground and when again filled up it has exhibited just the same blue stain. Scouring with soap and alkalies has also no effect once the rig marks show, and the only way out found so far is to dye the fabric black.

Although this fault cannot be cured it can be prevented if early measures are taken before strong oxidation takes place; and this can be done by crabbing the grey cloth immediately it leaves the loom, following the crabbing process by scouring with earth and ammonia. By this means the oil is comparatively fresh, and is easily removed by the hot steam followed by ammonia. Crabbing is recommended first because it prevents the cloth shrinking unduly and keeps the design set, while the blowing following the winding on greatly helps to loosen and drive out the oil. Should some of the weft be of greater age than the remainder, the chances are this may contain oxidized oil and will probably show in broad bands across the cloth just the width of the bobbin. As mentioned previously, grey cloth sometimes changes hands three or four times between maker and dyer, and therefore, to guard against stains forming, the merchant should insist that the cloth be crabbed and scoured with ammonia by the maker directly it leaves the loom. After this it can be dried on a tentering machine and stored for any length of time.

To makers who sell their cloth in the grey, this process would not commend itself, as the cloth would weigh considerably less. On the other hand, the buyer would know he was buying wool only, and could depend much better upon the cloth coming up to the required weight when finished. Manufacturers who dye, finish, and sell their own cloth, would find this early crabbing a benefit, as they could then keep a stock of greys without any danger of future oil stains. This crabbing and scouring with ammonia and earth would not shrink the cloth like ordinary soap-scouring, so that it could be easily done even in cases where the goods were required "not scoured."

Stains resulting from soap left in during the scouring are very common. This soap, when in contact with the acid used in dyeing, is immediately split up into free fatty acid, which adheres to the cloth while the soap's alkali forms a neutral salt with the dyeing acid. If scourers would only realize the importance of getting out all the soap, much trouble would be saved to the dyer, and uneven color avoided. Soap is not easily eliminated from scoured cloth, very often some remains in without showing itself; this applies to both the hard and soft varieties, but particularly to the hard white soaps. Most scourers use more than is necessary to clear out the dirt; this means prolonged running of the goods to wash clear. Ammonia is invaluable for clearing out soap or grease of any kind, and its property of evaporating makes it safer to use than soda ash.

Soaps containing rosin or unsaponified

oil are very dangerous, as also are those holding a large amount of free caustic. In some mineral oils hydrocarbons are present, which deposit a solid body on being mixed with an oil of animal or vegetable origin, and this may account to some extent for the white stains caused by oxidation in greasy wool goods. Organic oils cannot be added to any kind of mineral oil owing to this deposit of a solid substance, and in certain cases the deposit would require time and probably the action of light to complete it.

Stains from lubricating oils are most dangerous when they contain finely divided

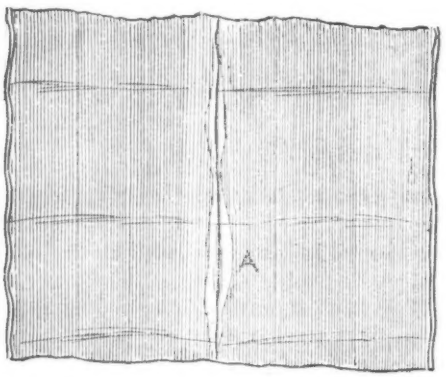


FIG. 4.

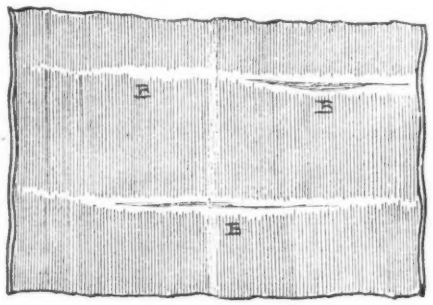


FIG. 5.

metal from the bearings. This is usually copper from the brasses, or iron from the shafting itself. In these cases the oil is fresh and is quickly removed by the hot liquor; the metal, however, remains and forms salts with the acids used in the dye vessel. Stains from iron darken the part by saddening the color, while copper acts in the same manner, but to a much slighter extent. Mineral oil in an old stain can only be removed by soaking for some time in olive oil, and then removing both by scouring with soap; much, however, depends upon the age of the stain, and in rig stained worsteds, the mark, when it once shows, is practically indelible. Size is seldom used for any but the lowest of wool goods, and will not oxidize on exposure like oils; it is more liable to mildew, and this causes mischief quite equal to oil but not generally so extensive. If mildewed cloth is treated before the organism has died away the fault can be cured as the mildew flourishes in the size. When this is exhausted, it attacks the gelatinous part of the wool fiber, which afterwards will never take up dye properly.

Linseed, cotton seed, rape, palm oil and all the organic oils oxidized more or less on exposure to air, and in the case of greasy wool fibers, the film of oil would be so thin that oxidation would be very rapid. Light appears to be a more active agent in producing rig marks than exposure to air, and it is certain that goods age much slower if exposed to the air, but protected from light action. Direct sunshine is worse than ordinary daylight, as is well known by its effects upon mordanted and dyed material, and organic oils and fats soon turn rancid under its influence.

There is another phase of oil stains in scoured wool goods not widely known; that is stains caused by using greasy press papers in the finishing. The fault appears all over the face of the fabric, and looks as though the cloth was watered or embossed; it, however, can be distinguished from watering by the fact of it being removed by benzoline when rubbed. Another peculiarity of paper marks is that the fault is just the size of the press paper and ends abruptly, whereas watering goes for yards into the cloth and is quite fast. Grease is sucked quickly out of press papers in the pressing of scoured goods, and papers should always be kept apart for grease dyed goods so as to avoid stains forming on scoured cloth.

Figs. 1 to 5 illustrate how rib and cuttle

stains are formed, and show their appearance in the open width fabric. Fig. 1 is a piece of cloth folded or doubled down the center with the face side innermost; this when folded or rigged forms a double cloth half its open width. When this is cuttled, as seen in Fig. 1, the center of the fabric is inside the double folds, A, and these always get more exposure than other parts. The transverse folds at B are in a great measure protected from light, etc., by the lapping which covers them, as shown in Fig. 2.

Fig. 4 gives a view of the cloth at full width, having up its center white marks caused by the exposure of the rig cuttles. As shown at A these are white patches often with a dark center due to dust, etc.; the dark places easily cover, but the surrounding white ring invariably dyes up lighter; the marks across Fig. 4 are simply the creases of the transverse cuttles. Fig. 3 shows a piece cuttled at full width. If stored in this condition without a lapping, the projecting cuttle edges seen at DEF will be exposed to ageing influences which may very likely result in oxidation of the parts. Fig. 5 shows an open width view where the cuttle edges have been acted upon and show a dirty crease encircled by a white stain. As mentioned previously, these white places are seldom visible until the cloth is wetted, when the bulk of the fabric turns slightly yellower, leaving the exposed cuttles of a whiter hue.

A WHORL FOR CAP FRAMES.

The object of a new form of whorl for cap spindles, invented by A. Albert Sack, of Providence, R. I., is to facilitate lubrication and make oiling unnecessary except at long intervals. The inventor describes it as follows:

Fig. 1 is a vertical central section of a cap spindle and adjacent parts, showing the new whorl; Fig. 2, a side elevation of the whorl, and Fig. 3, a plan of the base of the whorl.

A is the spindle fixed in the frame, B, and supporing the cap, C; D, the sliding rail provided with the usual lubricating chamber, E, for the spindle, A; F, the disk with its upper portion circularly recessed, at f. Resting upon the disk is the whorl, G, supporting the usual spool, H.

In detail the whorl, which is indicated in a general manner by G, comprises the head, g, provided with the belt flanges, g^1, and in which is mounted the spindle sleeve, g^2. The lower or bearing face of the head is provided with a circular recess concentric with the opening for the spindle, forming an annular recess, g^3, in the base of the body and below the lower extremity of the spindle tube. The

FIG. 2.

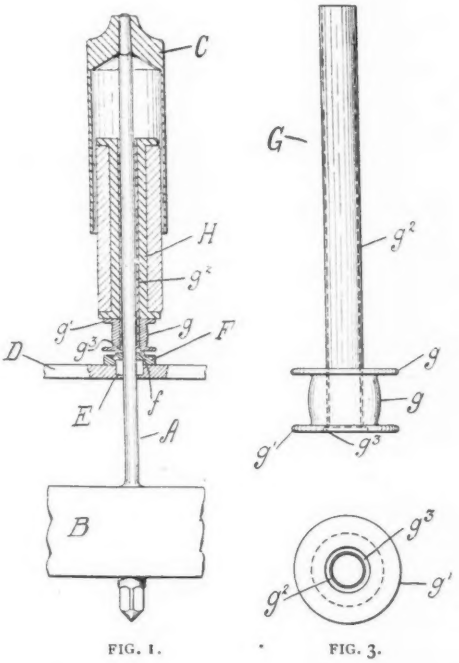


FIG. 1. FIG. 3.

recess, g^3, of the whorl body furnishes a receptacle for lubricating material.

Lint naturally accumulates between the disk and whorl and may be advantageously saturated with oil and form a good lubricant for the parts. If the natural accumulations are insufficient for this purpose, an additional supply of lint or other absorbent material may be added within the recess. Oiling of the parts is necessary only at great intervals.

Canada has 217 woolen mills, with 579 sets of cards and 2,034 looms; 29 cotton mills, with 832,437 spindles and 19,207 looms.

ENGLISH NOTES.

By Our Special Correspondent.

Low spirits characterize the textile trades generally at this moment. Money is at 3 1/2, and cheaper than for two years; in heavy metals the outlook is brighter, but pessimism holds textiles down. There is no spirit in the wool trade and the cotton trade seethes with every form of dispute. Altogether the tone is lower than any appearances justify. We were waiting for just such cheap money to re-establish confidence and all is misery now that we have got it.

The industrial set-back has been taken hard by all classes. All parties to the business are grumbling either on their own account or on behalf of other people. Cotton weavers are on the verge of a strike. In all this general pessimism a few persons find proofs that a revival will not long be delayed, but no comfort is drawn either from the cables from America or from the notices of creditors' meetings on the Continent. Meantime it is true that some, who reckon themselves fortunate, are not badly off for work. There is a widespread impression that one is better off than his neighbor.

* * *

While Americans shut their eyes to the necessity of closely testing textile materials, English people bestow constantly more attention to the point. Some present busyness in the testing-houses arises firstly from a desire to find pretexts for cancels. But testing and conditioning are on a natural increase.

Lecturing to works' managers Prof. Barker puts testing of products and testing of machinery all on one plane. Indeed it is odd that the man who will take heed of the slippage of a belt or the loss in transmission by shafting will ignore the invisible defects of the yarns and tops he buys or the naked truth about those he makes.

So it is right to couple the advice to use of a tachometer and a dynamometer upon the spinning frames with advice to ascertain the moisture in material and the breaking strain of fibers, yarns and cloths under different conditions. Aside from the direct economy of cutting out the cost of water is the fact that many helpful hints are to be drawn from the tests which are not at first sight important. The fact is one that English technologists are not overlooking.

* * *

Sir Alfred Jones of the British Cotton-Growing Association, who has made himself conspicuous by many loud boasts, adds another. "There is no reason why the Association . . . should not only supply the wants of the Lancashire mills but should not even sell to America." The Association, he asserts, "has proved that the Americans can never again corner the cotton market altogether."

It is not certain that all this gentleman's pronouncements are precisely tasteful to his colleagues. He is a shipping man, organizer of the banana trade between England and the West Indies and heavily interested as shipowner, merchant, banker and otherwise in West African trade. Having done exceedingly well out of all other of his enterprises, Sir Alfred has turned the full blast of his increasing enthusiasm upon cotton. As head of the African Line, British & African S. N. Co., Elder Dempster, Cie. Belge Maritime du Congo, Imperial Direct W. India Mail, Elders & Fyffe, as well as the Bank of British West Africa, his interest in talking-up non-American projects is not inconsiderable.

* * *

It appears that even those who have branch works in England are affected by the new law making British corking of British patents compulsory. The United Shoe Machinery Co. of Boston is negotiating for a site along the Manchester Ship Canal and it already has works in Leicester. The Act has brought over firms who were not here before and is bringing thoroughly those who were represented only in part. Negotiations with this and with many foreign patent holders are admitted to exist by the estate company concerned and sites are being bargained for on the railway side near London. While there are many rumors that have not yet condensed as facts the fact that arrange-

ments are going on in several quarters is apparent.

The provision in the British text requiring manufacture to work inventions to an adequate extent presumably dispenses with the farcical "working" prescribed by some Continental countries. It satisfies some regulations to carry over a machine, to set it running in some shape for the statutory three weeks and then to bring it home again. In this way—at considerable expense to themselves and with benefit to nobody—patentees of a silk machine that has never gained favor have had to curry favor with foreign patent offices. English regulations allow the excuse of "satisfactory reasons" and their framers took evidence upon the defects of contemporary rules.

* * *

In building a mill in a new quarter a Bradford firm foresaw a probability of running short of help. Electric trams have solved the difficulty. Two street-cars are engaged by the firm for the free use of their workpeople. These journey every morning past the homes of the people and land them warm, dry and on time at the mill. Help is plentiful, the owners have the site they fancied, and all at a very moderate expense.

* * *

Electrical driving is making quiet headway in the worsted as well as the cotton industry, In three large spinning mills in the Bradford area motors are being installed and are being employed much for dyeing-machinery. There are still stout adherents to steam and a woolcomber reports that his fuel cost, inclusive of heating, is 2 cents per 12 h. p. per hour.

This matter of heating promises troubles. A silk weaving firm uses a gas engine of 100 h. p. Its fuel cost is the moderate one of $9 weekly, but it does not warm the mill. In cold weather more has to be spent on heating than on driving and there is always the uncertainty as to whether the next day will call for a fire. By the time the fire is effective artificial heat is occasionally superfluous. These side considerations and the fear that no substitute is quite so reliable as steam help to hold back the electrician.

The Bradford Anthrax Investigation Board are now willing to consider plans of machinery designed to force disinfectant fluid by hydraulic pressure through hooped bales of wool. They warn wool-users that locks stained with blood, or attached to particles of skin and fallen fleeces generally are the likeliest sources of infection. Owing to medical and mechanical cares anthrax is decreasing in Yorkshire. The woolcombers' combine which has had as many as 10 fatalities and 8 less serious cases in a single year had last year clean sheets from all its branches. Dusty East Indian wool is added to the list scheduled as dangerous.

* * *

A third concern in the Yorkshire woolen trade has adopted the principle of profit-sharing with employes. The head of the chief profit-sharing woolen firm has been using persuasion upon large employes in Japan, who seem to see in it a way to industrial peace. Certainly the profit-sharing workers are disappointed when the dividend falls. News that J. T. & J. Taylor, Ltd., of Batley, could distribute no more than 4 1/2 per cent. on capital and 7 1/2 per cent. (instead of 10) upon capital plus wages, was received in stony silence by the workfolk. Our operatives are as keen dividend hunters as most capitalists and on a 2 1/2 per cent. decline in bonus from their co-operative grocery society the seats of the hall have been ripped up before now.

A woolen exporter who has substituted participation in profits for Christmas gifts to his staff finds his men more careful and industrious. They work better together and their interest in the annual distribution is no feigned one. The system does not eliminate jealousies between co-workers and in the interests of peace one manufacturing concern makes all new-comers serve a probation. At its end their fellows decide whether or not the recruit is to become a regular member of the company.

* * *

Night-work in mills has just been vigorously denounced by the Chamber of Commerce of Roubaix as contrary to conscience and family interests. The Lancashire cotton

trade will have none of it, but in the busy time Bradford woolcombers run throughout the night regularly. Makers of low fancy woolens work double shifts as long as trade justifies the step. On dyers and finishers the necessity to do so is imposed temporarily at times. Efficiency is usually reduced in the dark hours and accidents are more frequent both to men and to machines. The practice, therefore, has enemies on both sides.

* * *

A scientific worker holds up wool-scouring as a splendid field for original research. He includes both the chemical and physical principles involved and believes that scientific understanding of all that goes on in the scouring bowl would correct many errors made by the rule-of-thumb man. One popular error specified by Mr. R. U. Hummel is the idea that alkali is added to scouring suds to saponify wool-fat, whereas its chief component is unsaponifiable. His own observations lead this investigator to prefer a hard to a soft soap and long steeping in a gentle detergent to short treatment in a hot and strong emulsion.

* * *

Good times have latterly been enjoyed by makers of sponge cloths. Of these the greater quantity are made from the coarsest waste cotton yarn. Knitted or woven very slackly and with a colored border these serve as domestic dishcloths as well as for machines. As silk is a better absorbent of oil there is a trade always in silk woven cloths, not always free from cotton, but composed chiefly of whatever is cheapest in silk noils and silk waste. Silk cloths are preferred for mills because of their lower liability to fire.

Makers of these conduct a kind of steam laundry, fetching away soiled cloths and bringing clean ones weekly and at a contract price. The grease extracted has a price for oiling carts and there are times when the business is very remunerative. The line has not been thought unworthy of the attention of manufacturers of some importance. In low woolens there is a parallel in the productions of grey "scourers" or floorcloths, by makers of cheap blankets. The goods are too easily made to be regularly a highly profitable line. More money lies in specialties under fancy names, like Seloyt, which is undyed cotton velvet and which polishes metals well. In this country one or two attempts at popularizing specialties for household dusting and rubbing have failed for want of capital to spend in advertising.

* * *

The requirement of fireproof cloths for Expositions is illustrated by an offer from Turin. Gold and silver medals and premiums in money are offered by the Laboratory of the Regio Politechnics for a fireproofing preparation for cloth. It may be for use on yarn, dyed or undyed cloth, the conditions are that it shall not spoil the strength, suppleness or color of the material. Competitors are to be prepared to supply the preparation for use in the 1911 Turin Exposition, but that should be the least of the possibilities before the perfect fireproofing agent.

* * *

An English journalist who has been touring Germany finds home-workers the worst paid textile hands. Silk winders all over Baden, he says, do not earn more than 1 1/2 cents an hour. Winding is done by the dependents of married men who could not otherwise make ends meet. The case is quoted of a mason whose average of $200 a year was increased by the earnings of the wife and two children. Winding silk from early morning till late at night the three make $7.50 a month. Cleaners of silk yarn are more generously paid and working 10 hours a day make their $1.25 or so a week.

In Baden women do woolsorting and earn from $1.50 to $2.05 in 60 hours. A wife and four children by woolsorting for four to six hours daily earn a total of $3.60 a week, out of which 60 cents goes to pay carriage and package on wool. Several Baden mothers are stated to have admitted to a Government inspector that they thrashed their children to compel them to work. He adds, "Baden might be searched from north to south in vain for a working man engaged in home work whose family eats meat daily."

CARD CLOTHING FOR LEADER CYLINDERS.

A method of clothing the leader-in cylinders of woolen cards, recently patented, is shown at Figs. 1 to 8. The object is to deliver the stock uniformly and without bunches to the card. Fig. 1 is a side elevation of a leader-in showing the proposed arrangement of the clothing; Fig. 2, a sectional view; Figs. 3, 4, 5 and 6 show the clothing employed; Fig. 7, the clothing with a strip of leather in the blank space. The

FIG. 1.

FIG. 2.

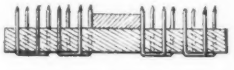


FIG. 7.

new arrangement consists in leaving blank one or more spaces in the outer face of the strip, so that when the clothing is wound spirally upon the cylinder, the teeth will not cover the entire surface of the cylinder. These blank spaces may be arranged longitudinally at one of the edges, or at the center or other intermediate portions of the strip of leather, so as to provide groups of rows of the teeth. The blank spaces may

FIG. 3.

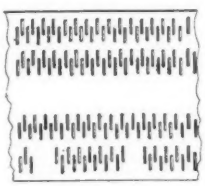
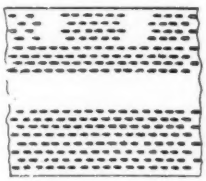


FIG. 4.

FIG. 5.

FIG. 6.



also be in the form of small rectangular or other shaped spaces, as shown in Fig. 3.

When the blank spaces extend lengthways of the strip they form a spiral space or channel around the cylinder and the teeth will also be arranged in spiral rows or groups, as shown at Fig. 1. It is claimed that this construction will cause the wool, cotton or other material to be fed more evenly into the machine, and will prevent the bunching of the material. The spiral rows of teeth will draw the material in strings or strands and the blank spaces or portions coming successively across the material being fed by the cylinder will cause the latter to release or partially release the material to prevent large bunches being pulled into the machine as is now the case where the teeth cover the entire surface of the cylinder. Another claim is that the blank spaces make the card clothing last longer, since the machine will not become readily choked with large bunches and hence the teeth will not be mashed down or bent. Fig. 7 shows the blank space partially filled with a strip of leather or other suitable material which is wound around the cylinder. This filling strip is provided to adapt the cylinder for handling cotton or other light material, and it may be readily removed when the cylinder is to be used for handling wool, shoddy and other heavy material.

FULLING FANCY FLANNEL.

Editor Textile World Record:

I have read with interest your reply to "Amanda's" question in the March issue of your journal regarding the fulling of fancy flannel. I have had the same trouble that "Amanda" speaks of and overcame it by using a soap with less body. Heavy soap causes the goods to stick together during the fulling process, with the result that creases are formed.

The soap I used was made up as follows:

4 oz. soap.
2½ oz. alkali.
1 gal. (8⅓ lbs. water.

By using just enough soap to moisten the goods well the difficulty with creases was entirely overcome.

The trouble with the selvage can be remedied in the weave room. Norwich.

RECENT DEVELOPMENTS IN ENGLISH COTTON MILL CONSTRUCTION.

BY AN ENGLISH MILL ARCHITECT

In the year 1900 there were approximately 104,000,000 spindles at work in the cotton spinning industries of the world, of which 44,000,000 were in England. The number in England has now grown to nearly 55,000,000, mainly through the erection of new mills during the last three years. The majority of the buildings are of the ordinary type, but in a few instances new ideas have been introduced, which may in course of time become general whenever circumstances will allow. Mills have recently been erected with the whole or the main portion of the machinery on one level, top lighted; a system which facilitates supervision and saves both labor and time. There are practically no stairs, or only to a very limited extent; and with fireproof doors to all openings fire risk is reduced to a minimum. At most one room could be burnt out in case of fire.

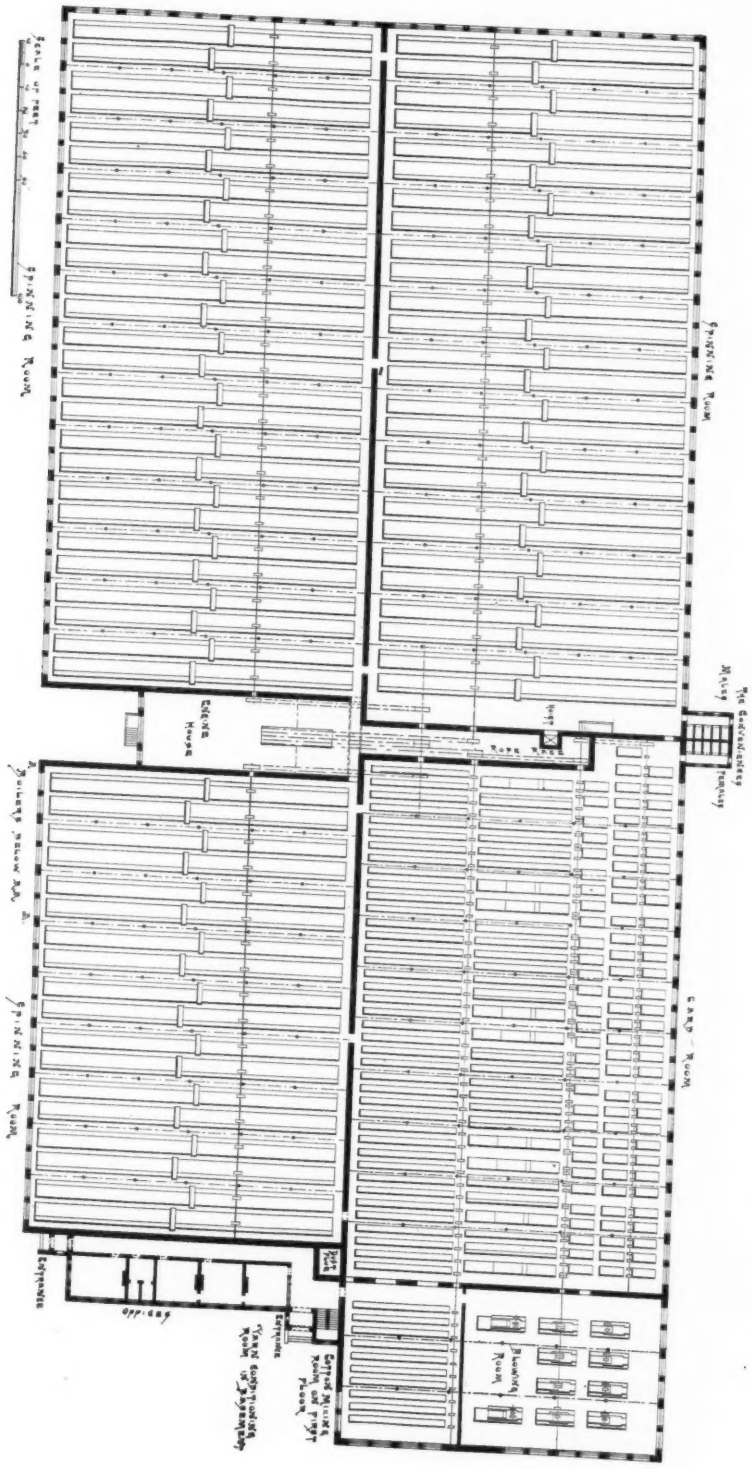
The plan illustrated is typical of those which have been erected, and is one of a mill to be built this year. For one-story mills cheap land is the main consideration, given that there is no advantage in erecting buildings five or six stories in height, as it has been ascertained that the cost of a one-story mill containing, say, 100,000 spindles is less than that of a mill containing the same number of spindles with rooms placed one above the other. There is no difficulty in finding sites in the cotton spinning centres of England suitable both as to price and all other requirements for buildings of this class.

The plan shows a factory with four large rooms and several smaller ones. In the centre are the mill or rope race and the engine room, while the boiler house is placed in a basement excavated under the corner of the smaller spinning room. The blowing room is placed at the end; over it is the cotton store room provided with outside loading doors and directly adjoining is the card room for the whole of the preparatory machinery. Underneath the card room is the conditioning room for the storage of yarn. The other three rooms are the spinning rooms, two large ones containing each 26 self-acting mules, and one smaller one provisionally shown to contain 18 mules, but which may be increased in size by the addition of another bay so as to hold 20 mules or even 26 if ultimately desired. The machinery would then be as follows:

2 vertical openers and scutchers.
4 intermediate scutchers.
4 finishing scutchers.
93 carding engines.
63 finishing deliveries of drawing.
792 slubbing spindles.
1,716 intermediate spindles.
6,680 roving spindles.
70 or 72 self-acting mules.

The clear height of the rooms is 16 feet; there are, as shown, large window openings in all outside walls and roofs with north light as in a weaving shed. The roofs are carried by light cast iron columns. The walls are of brick. Reinforced concrete has as yet only been tentatively used for floors, but in the mill illustrated it may possibly be also used for the external walls. The objection to that is its unsightly appearance. Mill owners in England take considerable pride in the appearance of their mills. All those erected during the last few years are well designed, faced with the best made bricks and form, in the majority of cases, attractive and imposing buildings. No mill architect could make concrete for outside walls into an attractive building material; it is doubtful, therefore, whether it will ever be used except for floors and in positions where it is concealed.

The type of engine to be used has not yet been definitely decided. Several are in use for driving cotton mills in England. Economy of working and of upkeep are the essentials. The horizontal compound tandem engine, the inverted vertical and the side-by-side horizontal triple expansion engines are those most generally used. A piston speed of 650 feet per minute and a steam pressure of 150 to 200 pounds are the ordinary requirements. Opinions as to the advantages of superheating are divided in England, as it occasionally gives rise to trouble, due possibly more to defective construction than to defect of the principle. Economy of coal consumption may result from its use, which



may, however, be to some extent neutralized by greater wear and tear. Steam consumption with dry steam is about 11 1/2 pounds per horse power.

Cotton factories in England are never very far from coal mines, in fact, all the manufacturing towns are either on or close to the coal fields. The coal consumption of large cotton mill engines ranges from 1 1/2 to 2 pounds per indicated horse power. Turbine engines have only just been introduced into one cotton mill and some years must elapse and good results be obtained before mill owners, who are generally slow to commit themselves to new ideas, are likely to adopt them.

AN ENGLISH SPINNING TRUST.

BY JAMES STRAND.

Were it an American organization, The Fine Cotton Spinners' & Doublers' Association Limited, Manchester, would doubtless be called a trust. It is called in England a combine and it is certainly not the least successful of the several combinations in the textile industries which were formed eight or nine years ago. This one dates from 1898, carries on the business of fine—or rather, superfine—spinning and doubling and amalgamates not far short of 50 subsidiary companies. Its chief operations are in Lancashire, but the Association has bought out two competitors in France, and in addition to mills, owns a large coal-mine and a raw cotton merchants' and brokers' business. About 3 1/2 million spindles are under the Association's absolute control and it owns the best-reputed spinnings in its market.

In certain of its works thicker yarns for special purposes are spun, but the Association is concerned chiefly with counts about 80s and rising to 300s. It works up virtually the whole Sea Island crop and is the chief consumer of Egyptian staple. Of the production of the highest numbers the combine may fairly be said to have a monopoly. In its lower and middle numbers it has the competition of various old and many new outside mills to meet, and of these counts has not a monopoly.

Its mills spin most of the yarn that Paisley "sixes" into sewing thread, and J. & P. Coats, Ltd., in order to safeguard its yarn supply the better, holds a milllion dollars' worth of this Association's ordinary shares. Extremely careful work in preparing and spinning is needed to satisfy the sewing cotton magnates and the Association has customers who are even more scrupulous as to the class of yarn they use. One of the difficulties the combine has to meet is the unwillingness of makers of the very finest nets and cloths to use yarn from any but a certain mill.

While from the central managerial point of view it is deplorable that a customer will not allow another associated mill to fill his orders when the accustomed mill is oversold, the case is not without its compensations. Outside competition in the finest class of yarn is all but forbidden while this prejudice obtains. Until he has achieved the ultra-difficult task of proving that his yarn is always good alike an outsider cannot count in business. And what is difficult for firms in the combination must be still more so for him. The combine does not encourage others to grow thus fastidious. The branch manager, who has booked more than he can deliver, or has orders for counts he is not making, passes the surplus to the central office from whence the order is sent to another branch. Delivery comes from the mill which accepted the original order and the customer is not necessarily told that the yarn was not produced there. Thus does headquarters seek to benefit by the forces of amalgamation. And in times of great pressure it is said that the Association will buy yarns from the open market to satisfy orders its own spindles cannot fill.

The branches have been manoeuvred gradually into the trades for which they are most fit. Without specialization combines can do nothing to secure the promised economies of combination. Without the maintenance of the old names, associations and—so far as may be—personnel, they cannot keep alive the conditions that made their business successful in their independent states. To strike the balance between the old and the new has been easy to none, and has

been impossible to some combines. The fine spinners have been creditably successful and the means they have adopted do not differ in material principles from those taken by other combinations that have avoided failure. They have a small executive (7) meeting weekly and a general board (18) meeting monthly. The managing directorship is otherwise vested in one man and the management of each mill is in the hands of one who may, or may not, be a member of the general board.

A general control is retained by the executive over prices, and headquarters buys all machinery and stores. All accounts are paid from the central office and all statements of account are issued from there. The statistical department is placed there and the fine spinners resemble their fellow-combines in paying the strictest attention to figures of costs. Arrangements are such that the closest comparison can be drawn between costs for similar operations in separate mills. Then the Association has its body of inspectors who pay chance visits to all works and report on their discoveries. There are inspectors for every process, technical or commercial, and for engineering.

Every detail is exposed to the keenest supervision, but the manager responsible for the individual mill has latitude in dealing with customers. He buys cotton for his requirements and makes prices for his own yarn, and he accepts or declines business at discretion. His remuneration is by commission on profits as well as by salary and there are those below him, as well as above him, who depend on a system of bonus upon results.

Except that they are under general instruction from one source, the branches are individual entities. The influence of the executive is exerted through their managers and there is no question that it is more acceptable thus, than an uncushioned influence would be. Customers want neither to deal directly with a combine nor to have it deal as it chooses with them. They prefer relations to exist with some man to whom their custom is of importance, and who will see to the due fulfilment of their wishes. To leave the branch managers a certain latitude is therefore as essential in the scheme of things as to leave the branch a character of its own apart from that of the combination in which its profits are eventually merged. That is an item in the policy of all the combines and the tendency in some is rather to emphasize than to sink the identities of component businesses.

As the supreme test of the success of a combine is the financial one it will be necessary to refer to the balance sheets of the Fine Spinners' Association. Its prospectus shadowed forth 8 1/2 per cent. and the dividends distributed are these:

1899	1900	1901	1902	1903	1904	1905	1906	1907
8	8	9	8	8	8	4	6	10

per cent.

It will be seen that the partial monopoly character of the Association did not prevent it from suffering when all other cotton enterprises were hurt. The recovery has been rich, for 1907 profits were materially better than the total of the two preceding years. Annually a sum of $700,000 is written off as depreciation and the properties of the combine are valued now at under $25,000,000. As $35,000,000 would hardly replace them—with machinery and buildings at their present prices—the Association cannot be called over-capitalized now. The capital issued is $36,250,000 in 4 per cent. mortgage debentures, 5 per cent. cumulative preference shares and ordinary shares. This division of the inferior securities into two classes is usual and is of advantage. Another textile combine which has hitherto had ordinary shares only, is taking steps to convert half into preferred stock at a fixed dividend. Split in this manner the stock stands higher in the market.

The value of the silk produced annually in three Chinese districts, Liutung, Chingchou, and Choutsun, is estimated at over $17,000,000. Nearly all of it is conveyed by carts or pack animals. The total exports of silk from all China for 1906 amounted to 28,437,400 pounds, the largest buyers being France, Italy and the United States, in the order named.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, any pertinent inquiry pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring ,not for publication, but as an evidence of good faith.

For reply to questions that are not of general interest to readers of textile journals, such as those relating to the composition of yarns, analysis of fabrics, etc., we will charge the enquirer with the cost of the investigation.

Shrinkage in Bleaching.

Editor Textile World Record:

We use considerable quantities of white sateens and it is our intention to buy them in the grey and have them bleached. We, therefore, bought a sample bale of 39 inches, 64 by 112, 4-yard goods and sent them to the bleacher to be finished 36 inches. There were 1,295 yards of goods sent, but when they were returned from the bleacher there were only 1,275 yards, a loss of 20 yards. We understood from several sources that these goods would gain in length, at least 2 per cent. Please advise us the amount of gain there should be, if any, on this class of goods when bleached and finished to 36 inches, when the grey goods are 39 inches wide. Jersey (962).

If the goods are finished pure there should be from 2 to 3 per cent. gain, besides allowing a small amount for damage and waste during the process. If the goods are back filled, the percentage of gain will not be the same. In this latter case the goods that are finished on a back fill mangle are more difficult to handle than goods that are finished pure or only slightly starched. I will give some examples showing the gain on different qualities of goods obtained by us during the last few months. These are taken at random. They do not show the losses, for in some instances they more than offset the gain. These losses are caused by accidents to the machines, where the goods get fast around the roller and have to be cut in order to get them loose. This cannot be prevented. Another cause may be that they are damaged in stretching. A roll may fall on the floor and get soiled on the ends. These are only a few of the many causes that result in a loss. In a case like this an understanding should be had that all the material should be sent back, or the bleacher held responsible for the shortage.

The grade in our mill that comes nearest to the fabric in question is a 40-inch grey cloth, 80 by 100 threads, 4.80 yards per pound, 37 inches wide finished. We put 100 pieces weighing 1,309 pounds and measuring 6,389 yards in a kier at a time. One lot of these goods when finished measured 6,796 yards, a gain of over 6 per cent. In the same room we had another fabric 40 inches wide, 90 by 100 threads, 4.30 yards per pound, 37 inches wide finished. We put 2,605 pounds measuring 11,211 yards in the kier and when finished they measured 11,602 yards, a gain of 3 1/4 per cent.

In another run we put in two sample pieces, 40-inch grey, 80 by 80 threads, 4.52 per pound, 37 inches wide when finished. The two pieces weighed 28 3/4 pounds and measured 130 yards. We obtained 134 1/2 yards. These examples will, I think, show the amount of gain that can be obtained. I could go on giving examples where there would be a gain of even 8 per cent. As a rule goods put through the process at 39 inches to be finished at 36 inches should give a gain of at least 2 per cent., for the shrinkage in the width is bound to give a gain in the length. If after the goods are bleached they have to go through the finishing machines, there will be more waste, for the more the goods are handled the more waste there is.

In England the bleachers' charges are based on the grey widths and the white lengths. The correspondent should arrange suitable terms when putting the goods on the market for bleaching. The figures showing the gain on the goods are all kept on file in our office and regular reports enable the office to keep track of the goods.

I would suggest that one piece be sent as a sample to the bleacher stamping on each width a private mark and giving the

bleacher to understand that the goods are not to be torn, whether dirty or not. In that way the lengths before and after going to the bleacher can be compared.

Dulcimer.

Measuring on Beam Warpers.

Editor Textile World Record:

I am having some trouble in measuring even lengths on the different beams in a set. The warpers are equipped with the regular beam warper clock, having 3,500 yards to a rap. Every now and again a beam will run out 60 to 100 yards before the rest of the set, often causing a waste of about 30 pounds. Do you consider any other form of clock better adapted to running odd lengths; for example, to run 10,000 yards the clock must be set 2 raps and 86 teeth? Newport (966).

The make of the clock would make no difference in this case, as one is as good as another. The measuring roll is driven entirely by the friction of the yarn as it passes over the roll. If the friction varies, as it would in what we call a light and heavy sheet, then the heavy sheet would run shorter than the lighter one. "Newport" may be running sets with a great variation in the number of ends. If, for example, he is running 5 beams of 350 ends and 6 of 500 ends, then the beam of 500 ends would run shorter than those of 350 ends. The yarn on the beam of 500 ends is recorded correctly by the clock, but more yarn will come from the 350-end beam than is indicated.

Another cause for this trouble, but which seldom arises, is running the warper too fast; when it is stopped to piece a broken end it revolves a few extra times; after 20 or more stops the clock has registered two or three teeth for which no yarn has been delivered. It more frequently happens that the yarn runs over instead of short. If the measuring wheel is not properly oiled it will fail to register and will give a long beam. It sometimes happens that the man who sets the clock makes a mistake of one or more teeth. It is very important to have each warper exactly the same size and turning freely. It would be well to have a man to set the clocks and hold him responsible for them. Have the warpers all numbered and chalk the number on the beam head as it comes from the warper, to enable the warps to be traced. Trouble may be caused by the slasher. If the friction weights are uneven, or if some of the ropes are new and some old, there will be a different tension on the yarn and consequently uneven lengths.

Thomas Barr.

Changing Ring Doffers on Woolen Cards.

Editor Textile World Record:

We have four sets of 48-inch woolen cards with two doffers. We are taking off 36 ends of roving, 18 ends on each spool and two waste ends. We want to take off 54 ends and use 3 spools. The size of the roving is about 5/8 run, made from horse blanket stock. What changes will be necessary to get the best results? Hampshire (967).

In order to put 54 ends on a 48-inch card, or 3 spools of 18 ends each, it would be necessary to put 27 rings and 1 waste ring on each doffer. There should be 27 top rings, 13/16 inches wide, besides 1 wide ring to carry waste end. The bottom doffer should have 27 rings, 14/16 inches wide, and 1 wide waste ring. On the short side of the Apperley feed a 1 1/8-inch waste ring should be used; on the long side a 1 5/16-inch waste ring, as on this side the stock is more likely to bunch in. The lickerin has a better chance to comb out the stock on the short side of the feed. On the short side the feed rolls hold the fibers while the latter are being combed out by the lickerin; on the long side the feed rolls let go earlier. For these reasons it is better to use a 1 1/8-inch waste ring on the short side of the feed and a 1 5/16-inch ring on the long side. Most carders use 1 1/2 or 2-inch side rings. We have used all sizes from 1 1/4 to 2-inch, but the best results are obtained from the 2-inch outside rings. When more than 48 ends are taken from the doffers a narrower outside ring is used. A good rule to follow is

27 rings, 13/16 inch equal 21 5/16 inches.
27 rings, 14/16 inch equal 23 10/16 inches.
2 rings, 1 4/16 and 1 13/16 inch equal 2 7/16 inches.
Total, 48 inches.

One and one-half and 1 9/16-inch outside rings can be used. This will make both outside rings near the same size and they will work fully as well.

The best way to run the ends is to take 9

outside ends from each side of top doffer to top drum, making 18 in all. The center 9 ends pass to the center of the middle drum; the 18 ends on center of bottom doffer, to bottom drum; the other 9 ends on outside of bottom doffer, to center drum of spool stand. This may look like a Chinese puzzle, but if the stock is good it works very well; if the stock is poor, the three-spool stand is a nuisance. A three-spool stand should never be used on heavy work. As "Hampshire's" work is 5/8 run on the card, 48 rings are all that should be used. For that size the rings should not be less than 7/8 and 1 inch wide. By using narrower rings the stock is packed tight on the ring to get the weight and it is hard for the wipe roll to take it from the doffer. This often causes twits and bad places in the roving, makes the work go bad on the card and all through the mill.

It would be a good plan to change the mule to take 24-end spools and use 24 ends on each doffer with outside rings. If this is not advisable it might be well to put the card in good shape and increase the speed of the doffer. A card on 5/8-run work should take off from 400 to 600 pounds of stock a day. Another way of increasing production is to increase the size of the doffers. An increase of 3 inches in the diameter of the doffer would increase the production 50 per cent. If doffers 9 inches in diameter running 20 revolutions a minute and taking off 300 pounds of stock a day are exchanged for doffers 12 inches in diameter and running 20 revolutions a minute, the production would be increased to 450 pounds per day, a gain of 50 per cent. The larger the doffer the better the work as the cylinder has more surface to lay the stock on. Rogers.

Changing the number of ends from 36 to 54 will necessitate the use of narrower rings and probably have the effect of crowding the cards in getting the heavy roving required for 5/8-run yarn. On horse blanket stock and similar material, the top doffer will often collect more stock than the bottom doffer, making it necessary to run the former faster. To get 54 ends the rings can be arranged as follows:

2 waste rings, 1 1/4 inch.
27 top rings, 13/16 inch.
27 bottom rings, 14/16 inch.

When using 1 1/2-inch waste rings it is advisable instead of having a cotton or woolen web on the Apperley to use a leather band with wire set in for that purpose the width of the webbing. The card will have to carry more stock in supplying the narrow rings. The ring doffers must be kept in good condition and points kept clear, by having dickeys put on the rings or by having wire wipe rolls set to the rings just so they will clear the points. It is preferable to have these rolls covered with a medium wire about 3/16 inch long with a knee so that it will not stand up straight. It is advisable to have the wire set in leather.

In running dickeys the surface speed should be high enough to keep the points clear without having to set hard on the rings. If fancy wire is used on a 2-inch dickey with a 12-inch doffer running 20 turns, it will be necessary to run the dickey about 45 turns. Ironside.

On the top doffer the use of 13/16-inch rings would be advisable, making a total length 21 15/16 inches. On the bottom doffer use 14/16-inch rings, making the total length 23 10/16 inches. This would leave about 1 1/4 inches for each waste end and 45 9/16 inches for the 54 regular ends, or 27 ends to each doffer. A 3-spool stand will be required to bring the roving on 3 spools of 18 ends each; the center spool receiving 9 ends from each doffer; this would necessitate an increase of stock on the breakers.

In placing rings on the doffer the wide ring must be put on the top doffer on the wide side of the feed.

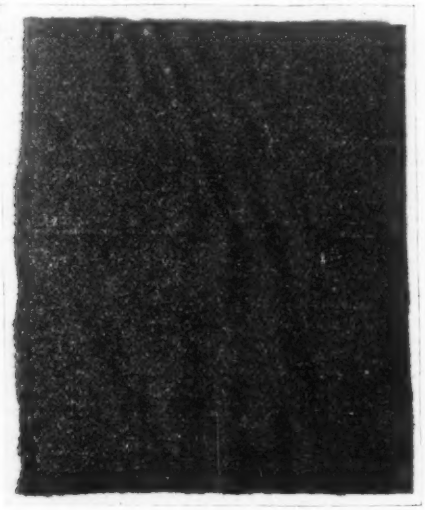
Newport.

For the year ending June 30, 1907, the United States imported raw cotton to the value of 19 millions of dollars and sold cotton to the value of 481 millions of dollars.

London Shrunk Process.

Editor Textile World Record:

I should like to have your opinion of the efficiency of the "dewing" process in the shrinking of woolens. I understand that some of the mills that stamp their goods "London shrunk" are using this method. They suggest giving the goods a light steam sponging before cutting, which we often find not only causes shrinkage but



cockles the goods. The results are not as good as with similar fabrics on which the "London shrunk" process has not been used.

Another source of great complaint is the tendency of so many worsted and mercerized fabrics to cockle in the process of steaming. Is there not something in this latter day process of manufacture that is responsible for both the evils herein mentioned? I enclose sample showing the difficulty. Sponger (970).

The "London shrunk" process consists in dampening the goods heavily, either with a "dewing" machine or by rolling the pieces between the damp leaders. After the cloth absorbs sufficient moisture, the pieces are pressed in a plate press. In this way all stretching of the goods, either widthways or lengthways is avoided. This process is rather laborious and slow. In order to obtain a larger production and reduce the cost of labor, a number of mills have adopted a different process which they nevertheless call "London shrunk." Ordinarily it consists in dampening the cloth lightly on a "dewing" machine. The pieces are then run through a rotary press which stretches them lengthways. They are then dampened again lightly on the "dewing" machine and pressed a second time in the rotary, which stretches them still more. This process naturally results in leaving the fabric in such a condition that it will shrink when sponged. The process is wrongly called "London shrunk" and in all probability was used for finishing the goods under examination.

Finisher.

Determining Whether Goods Are Yarn or Piece Dyed.

Editor Textile World Record:

I would like a simple and sure method for determining whether a colored textile is yarn or piece dyed. Lydon (981).

We do not know of any certain test for determining in all cases whether a piece of cloth has been dyed in the yarn or piece. There are conditions that indicate this with considerable degree of certainty. If the cloth is felted hard and the centre of the thread is found to be a lighter shade than the outside, this would indicate that the goods had been colored in the piece and that the dye did not penetrate the well felted fabric. If the selvage of a wool fabric is made with a few threads of white cotton to form a stripe and this cotton is slightly stained the shade of the body of the goods, it is a fair inference that the goods were dyed in the piece and that the cotton threads were inserted to give the appearance of wool dyed goods.

Glue for Cotton Piece Goods.

Editor Textile World Record:

Is there a glue or paste that will hold piece goods together through the boiling and bleaching process, the goods to be pasted together instead of sewed? Spring (971).

There is no paste or glue to my knowledge that will stand the bleaching and boiling processes. I have always had difficulty in getting glue to stand the starching process without having the ends separate during the drying of the goods. Delco.

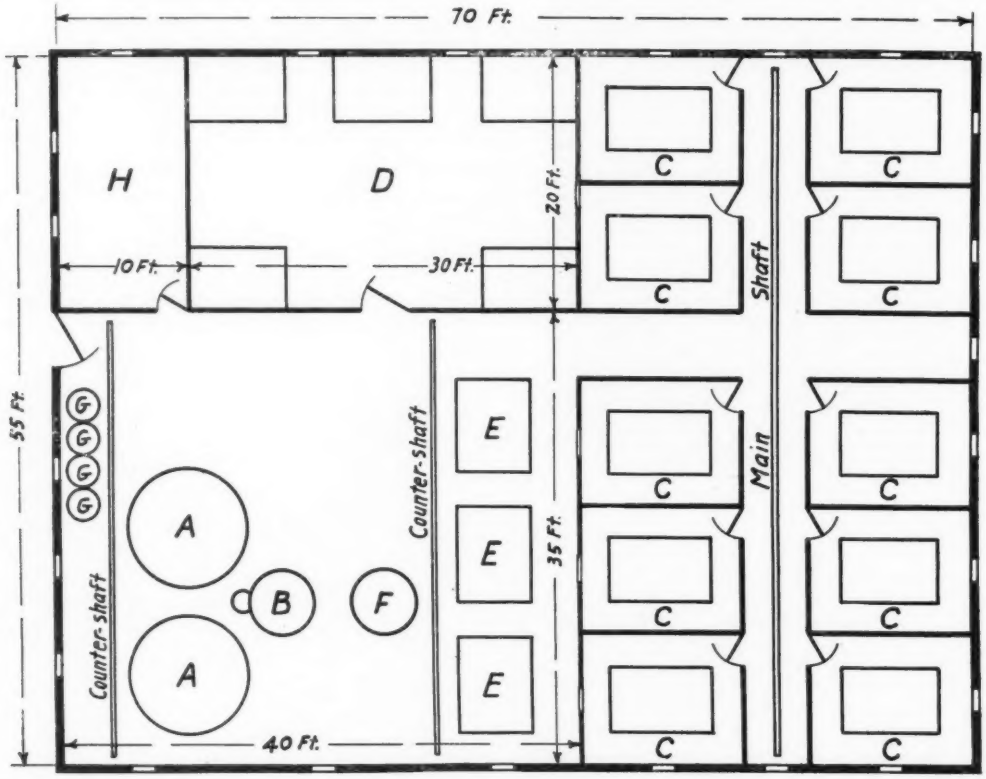
Plan of a Dye House.

Editor Textile World Record:

We have a building 80 by 178 feet, one story, which we want to use for a dyeing establishment. Our idea is to dye black hosiery only at the start. We probably will confine ourselves to the oxidizing process of dyeing. Which would you suggest as the best equipment? Blackmore (980).

The accompanying plan is for a dye house to handle 2,000 pounds of oxidized black lisle hosiery a day. The tom-toms, A, are 2 ft. 6 in. deep and 3 ft. 6 in. in diameter. The goods are put in this machine dry and rung for 30 minutes, then taken to the extractor, B, by means of a shoot. The dye liquor is collected in a catch basin and carried back to the tom-tom. The goods when extracted are laid in boxes and left covered until next morning, when they are entered in the cages. Each cage has two apartments and is separated from the others by suitable partitions so as to enable the temperature of each cage to be regulated independently. The cages are each about 10 ft. high and 9 ft. long, and are driven by chains in such a way as to enable the cage to be run about 12 revolutions per minute, until the goods are aged and then 20 to 22 revolutions a minute to give the lisle finish. Each cage is heated by a steam coil.

This process requires 8 to 9 hours, after which the goods are taken to the cooling room, D, which is fitted up with wire tables on which the hosiery is spread. The air is drawn down through the goods. After this operation the goods are taken to the oxidizing machine, E. When oxidized they are extracted in the machine, F. The tubs, G, are used for preparing dye solutions. The room, H, is used for storage on dyestuffs and chemicals. Devon.



PLAN OF A DYE HOUSE.

A consular report states that in 1906 there were 3,228 strikes in Germany, affecting 16,246 factories and 272,218 persons.

Crash Toweling.

Editor Textile World Record:

We would like to know about the finishing of the enclosed sample of crash toweling, also the style of shear required and the number of calenders that would be required to finish goods same as sample. Crash (977).

To obtain a finish on crash toweling like the sample, "Crash" should proceed as follows: After the goods are bleached and washed ready for the finisher, they must be passed through a water mangle and got as dry as possible. It would be a good plan to pass them through boiling water at this stage of the process, as this helps to swell the threads, thus putting them in better condition for absorbing the starch. After having been mangled the goods are taken to the starch mangle and passed through a mixture of starch consisting of 3/4 to 1 pound of starch to 10 pounds of water. These proportions can be varied as required. A little wax paste and borax would help to give the goods a lustre if added to the mixture, which should not be boiled too long. The goods are passed through this mixture, and must not be squeezed too dry at the starch mangle.

They are then passed over the driers, but must not be thoroughly dried. A little moisture should be left in them. This is the most important part of the process. To have the goods finished up right it is necessary to regulate properly the moisture. It requires a man of experience to get the goods right at this stage in order to get a uniform finish. If there is too much moisture left in the goods they will finish soft, and there will be the risk of mildew. If there is not enough moisture they will finish hard and brittle and will have neither the desired feel nor finish.

After the goods are conditioned they are run from 20 to 40 minutes on the beetles, to produce the linen effect which is shown so well on the sample. The thick, firm feel which is so much sought after by the towel buyers depends on the conditioning. The goods are next passed through a calender to finish and straighten them out after coming from the beetles. The machines required are a water mangle, starch mangle, driers, beetles and a small calender of 3 to 5 bowls.

This finish can be imitated on a calender by what is known as the "chased" finish, which is obtained by passing the goods through all the nips and round two rollers behind the machine, underneath the rolls and through all the nips again, twice around the chase. This method is not as good as finishing on the beetles. The threads are not flattened out as much and the linen finish does not show up as well. If "Crash" has a calender I would advise him to try the chased finish before going to the expense of installing a set of beetles. Dulcimer.

Equipment of a Braiding Plant.

Editor Textile World Record:

What would be the approximate cost of a braiding plant to make shoe laces, the yarn to be bought, the plant to be large enough to run on an economical basis for shoe laces alone or in connection with other lines? How much help would be required and what would be the probable output? Ottawa (961).

The cheap grades of shoe lacing are made in large mills that are equipped with both spinning and polishing plants and turn out goods by the ton. It is difficult for a small manufacturer to compete with these large mills because he cannot buy the polished yarn as cheap.

The better grades of shoe laces are made from imported glazed yarns, also from mercerized cotton and silk. Of late years the business has become specialized to such an extent that there are a number of concerns that make only the wide shoe laces for low shoes and others make only the tubular goods.

In Canada particularly the question is an intricate one because of the tariff conditions entering into the cost of the yarn and finished goods. Inquiries of this kind can only be answered by a somewhat lengthy correspondence after finding out a number of details such as the qualifications of the man as a manufacturer, his connections for selling the goods, his location in regard to the markets, etc. Susquehanna.

In 1898 one ton of indigo had an average value of $198 and in 1906 only $60.

KNITTING DEPARTMENT.

For Knitting Mill Machinery, Equipment and Supplies, see pages 235 to 253. Also Buyers' Index.

THE KNIT GOODS SITUATION.

The situation in the fall underwear line is still very unsatisfactory and gives little hope for immediate improvement. One ray of sunshine may be seen in the fact that it must become evident to some of the buyers that in the near future they will be obliged to operate more freely, if anything like a normal business is to be done. If this awakening is not delayed too long there may yet be a chance for the manufacturers to do a satisfactory season's business, but if the buyers continue to pursue very much longer the hand to mouth policy that they are now following, the manufacturers will be unable to take care of the demand that is bound to come in the months of August and September. It is very difficult at the present time to interest buyers to any extent and it is recognized that any attempt to force business is meeting with poor success and it is found that it is not even advisable to urge the buyers too strongly for details for the conditional orders that they may have placed. To be sure, there are a few orders coming along from day to day, small quantities, presumably on lines that jobber's salesmen are taking orders on, and on which the buyers wish to keep covered.

Manufacturers of standard lines of men's fleeces are firm in their quotation of $3.75. and the silk trimmed goods are strong at $3.85 and $4.00. Some of the lower priced lines of men's ribbed goods are reported to be in a fairly well sold up condition which has a tendency to increase the strength of the lines at $3.65 to $3.75.

It begins to look as if a number of jobbers are selling the market short on fall lines. This is evidenced by the fact that a number of manufacturers say that some of the larger jobbers have ordered a full complement of samples for all their road men and have bought only sample cases of the goods.

A trip through the Mohawk Valley shows a condition of affairs that has not existed there in several years. A great many mills are shut down entirely, or running only about half time, and a careful tabulation of reports from the majority of manufacturers would indicate that only about 45 per cent. of the normal business has so far been taken. Jobbers who have been accustomed to start out on January 1st to solicit fall business, did not start until after February 1st this year, and now find that for the two months that their men have been out, they have taken only as much business as they usually take in the month of January. There is one good thing in connection with this, however, and that is, that retailers are buying about the same number of lines, but are buying only very small quantities, so if there should be anything like a normal demand for the goods from the consumer, there will be a good duplicate business for the jobber.

We learn of some concessions having been made on ladies' ribbed goods, weighing six pounds on size 6. One New York State manufacturer is now showing this weight at $1.85. The same manufacturer is showing a 7 pound vest with a 6 1/2 pound pant at $2.00, and the even pound extra sizes at $2.10.

The Rockingham Mills, whose production was sold through Lamson, King & Co., last season, are now out soliciting business direct. They have discontinued making a 6 pound garment, but are making a 7 pound at $2.12 1/2.

Spring lines at first hands are not active. Jobbers are taking in the goods they bought last June at high prices and as the sales of spring lines have been restricted for the past three months, stocks in the jobbers' hands are accumulating rapidly and many jobbers are having disagreeable half hours when, looking over their warehouse lists, they find they have plenty of men's balbriggan shirts and drawers that were bought last June at

$2.20 and $2.30 that can now be replaced for $2.00. Some of the lines that they bought at $2.15 may now be had as low as $1.85. Some of the combed yarn goods that were sold early at $3.62 1/2 to $3.75, can now be bought at $3.40 to $3.50.

John Quinn is showing a combination waist shirt made of the same material as the Pearl waist with long sleeves, tubular straps, pin tubes, etc., at $1.90 and it is believed that this will be a popular garment, as it gets to the consumer at the popular price of 25 cents.

HOSIERY.

The hosiery business for the past two weeks gives some evidence of improvement. Some orders are coming along from day to day, showing that stocks are becoming broken. While these orders are not of large volume, nevertheless they are of sufficient importance to warrant us in saying that a decided change for the better has taken place since our last writing. Of course, conditions are in no wise satisfactory and there are some very unpleasant features to be met with each day. Buyers are cancelling very freely any goods that are a few days behind in delivery, as stocks in the jobbers' hands are heavy. When a buyer has a chance to cancel a number on account of late delivery and he has anything in his stock that he can substitute, the chances are he will do so, in an effort to reduce the total stock bought last July at high prices and which can now be duplicated at from 5 to 10 per cent. less.

Some of the smaller manufacturers are endeavoring to force business and some low prices are being made, one instance of which is a 200 needle combed yarn half hose at 80 cents.

Some of the calls noted during the past month are for misses' fine gauge ribbed goods at 95 cents to $1.10 and for women's ribbed top goods at $1.00 to $1.05, and for tans in some of the lower grades, as well as men's fancy half hose at 80 cents to $1.00.

Chemnitz reports that unless a good volume of business comes very soon from America, the hours of labor will be shortened. About two-thirds of the output comes to the United States, and although manufacturers in Chemnitz state yarn and wages are still high, it is noticed that the agents on this side are offering nearly all lines of German goods at reduced prices. The American manufacturers will have keener competition from that source for the coming year than for several years past. It is now reported that it will be possible to bring out all the old values at $4.40 for another season, and even now some attractive values are being shown in ladies' split foot goods and in men's fine gauge lisle and fancy jacquard patterns to retail at 25 cents.

Progress in fleeced hosiery end has been slow, but the manufacturers do not appear greatly disturbed and say they expect a normay business before the season ends. Some few price irregularities are reported. Most manufacturers, however, are firm in their prices and appear to be willing to wait until buyers make up their minds to buy. For the good of the business it is hoped this feeling will continue.

It is believed that lines of wool goods are covered better by orders than any other lines. There has been little or no dickering on the prices and owing to the small number of manufacturers making this class of goods, the situation seems to be well in hand.

SWEATERS.

Business on coat sweaters continues in good volume, but it is believed that owing to the great number of manufacturers who have gone into this line, the profit will be cut considerably. The higher grade of worsted goods are being copied very extensively in the all cotton lines and will eventually hurt the sale of the better grades.

The Royal Gem Mills Co. are showing a line of both women's and men's fancy stitch coats that get to the retailer for a 50 cent garment.

The Capron Knitting Co. are putting out a line of boy's coats at $1.95 made in wide range of colors and combinations, and while they must of necessity be made up cheaply, they have all the appearance of the more expensive goods.

In 1906 the foreign trade of China with the United States amounted to $35,548,960.

STARTING A NEW HOSIERY MILL.

BY DAN BUCKLIN.

In starting a new hosiery mill, either on a small or large scale, one of the hardest propositions the manager or superintendent has to face is securing of the necessary help. There are only two courses open to pursue in order to secure the desired help, either to obtain experienced help from other places or break in green help. It depends largely on the location of the mill as to which of these plans is the most advisable. If located near a knitting center it is advisable to secure experienced help if possible. In order to do this it is usually necessary to pay wages a little above the standard scale of the locality, as it is generally necessary to offer some inducements in order to induce experienced help to make a change from an old established mill to a new one with its uncertainties. An objection to this plan is that it places the new firm at a disadvantage with its competitors. It is a difficult matter afterwards to reduce wages to the standard scale. In rural districts or in a new territory where it is impossible to secure experienced help the superintendant finds it necessary to break in green help. In such cases it is advisable to engage a few experienced operators, even though it is necessary to pay them considerably more than the regular wages. For one person to teach another properly it is necessary for the teacher to understand the subject thoroughly. For this reason I recommend that experienced help be secured to teach the green help. Then after the mill is in operation and things are going along smoothly it is an easy matter to equalize the wages of the operatives. The number of experienced operators necessary to teach the green help depends on the size of the mill. It is possible to secure from any of the large mills girls who are experienced in all the different operations in the manufacture of hosiery. In starting a mill on a small scale, one or two of these girls should prove sufficient. In a large mill I would suggest at least one or two skilled operators for each department. These can be secured for about $12 per week. The operatives which are the most difficult to train are; ribber hands, transfer girls, transfer machine operators or knitters, loopers and menders. We will now take up each of the operations separately and endeavor to show what an ordinary girl should be expected to do, and the standard prices usually paid for each class of work. The number of ribbed top machines an operator can handle successfully will depend largely on the gauge, quality of yarn, double or single feed, and whether with or without stop motions. However on single feed machines of medium gauge without stop motions an operator usually runs about 16 machines. If equipped with stop motions they should be able to run about 20 machines. The price paid per dozen also depends on the size and gauge, but on medium gauges usually runs from 1 cent to 2 1/2 cents per dozen, according to size; size 6, 1 to 1 1/2 cents, size 7, 1 1/2 to 1 3/4 cents, size 9, 2 to 2 1/2 cents. This operation does not require a great amount of skill, an ordinary girl or boy should learn to handle a set of 16 machines successfully in 30 days. The next operation is the picking on or topping the ribbed top ready for transferring to the footers or transfer machines. This operation is one of the most difficult for the help to learn. The chief requisites are good eyes and neatness. It usually takes from 3 to 6 weeks for a girl to be able to learn this work without making much bad work, and from 3 to 6 months before she can make good wages at piece work. The worst feature with this work is the large amount of good tops which are usually spoiled by the girls when learning. An excellent plan to reduce this waste is to knit regular "learning" tops with slack rows about an inch apart and have the new girls pick these on, pull them off, then pick them on again on the next slack course until she is able to pick them on neatly without leaving drop stitches or otherwise making bad work. When she is able to do this, she can be set to work on regular stock.

The amount of work and price per dozen also depends on the gauge and size. On half hose the quantity and price per dozen of the different gauges should be as follows: 76 and 84 needle, 30 doz. per day at 4 cents per

doz.; 100 needle, 25 doz. per day at 4 1/2 cents per doz.; 136 needle, 25 doz. at 5 cents per doz.; 160 needle,, 20 doz. at 6 cents per doz.; 180 needle, 20 doz. at 7 cents per doz.; 200 needle, 15 doz. at 8 cents per doz. On misses' and youths' ribbed hose the number of dozen and price paid for the various gauges are as follows:

Youths' coarse gauges, sizes 6 to 9, price for topping per doz, 7 cents for sizes 6 and 7, 8 cents for size 8, 9 cents for size 9. On this class of work a good girl can put on from 15 to 20 dozen per day according to size. On youths', medium gauge, sizes 6 to 9 the prices usually paid per dozen are: 9 cents for size 6 and 7; 10 cents for size 8; 11 cents for size 9. A girl should be able to put on from 12 to 15 dozen per day on this class of work.

Ladies' and misses' fine 300 needle hose 1, size 6 to 9: the prices should run from 12 to 14 cents according to size. A girl should be able to print on 10 to 12 dozen per day.

The next operation is transferring. The number of machines an operator can handle depends on the gauge, speed of machines and class of work. An operator can run more machines on size 9 than they can on the smaller sizes. Also can run more on men's half hose than on youths' or misses' hose. A machine operator should average from 40 to 60 dozen per day, and the prices should range from 3 1/2 to 4 1/2 cents per dozen according to size and gauge. It usually takes from 3 to 6 weeks for an operator to learn to handle a set of these machines successfully.

We now come to looping or closing the toe. This is the most difficult operation in the manufacture of hosiery. It is very poor policy to try to teach this operation to a green girl. It is much more difficult than topping owing to there being no loose course to follow. As a general rule topper girls make the best loopers, and as the work is very similar to topping they learn it much more readily than a new girl. When in need of girls in the looping department I have always found it advisable to transfer some of the best girls from the topping to the looping department, and use the new girls for toppers, when they soon become expert toppers. As looping is the last step in the manufacture of hosiery, and as new loopers are sure to spoil considerable work, after the work is nearly finished it is a good plan to try to avoid as much of this bad work as possible. By teaching the looper girls in this way poor work is reduced to a minimum.

The amount of work a girl should be able to turn out in a day also depends on the gauge and class of goods. The following table shows the number of dozen and price for the different gauges, viz:

120 needle line,	50 doz. per day,	3½c. per doz.
160 needle line,	45 doz. per day,	4 c. per doz.
136 needle line,	45 doz. per day,	4 c. per doz.
180 needle line,	35 to 40 doz. per day,	4½c. per doz.
200 needle line,	25 to 30 doz. per day,	6 c. per doz.

After the looping comes the welting. This is a very simple operation and is easily learned, for speed is the main object in this work. This comes with experience only. An ordinary girl will welt 125 dozen per day at 1 1/2 cents per dozen. This brings us up to the mending department. This is one of the most important departments in the mill, as neat mending will often result in making firsts of goods that otherwise would go for seconds. Neat girls only should be used in the mending room. The amount of work an inspector or mender can do in a day will of course depend on the condition of the work. If the goods come into the mending department with few holes and require little mending, a girl will of course handle more work than if they require a great amount of mending. Under ordinary conditions, however, a girl should be able to inspect and mend 50 dozen per day at 3 cents per dozen. It is usually very hard to set a piece work price on this class of work, as some work will require much more mending than others. In many mills this class of work is all done by the day. By so doing they usually secure better results, as the help are more liable to slight the work when working by the piece. An excellent plan is to use the poorest help for inspectors and pay them by the piece; the neatest and best help for menders and pay them by the day. If this plan is followed I would suggest that the menders be paid as much or a little more for their work than they could

make anywhere else in the mill. By so doing there will be no trouble in securing the very best of help for this department.

This practically concludes the operations as far as the actual manufacturing is concerned. In addition to these we have several important operations in the finishing of the goods. The principal operations under this head are dyeing, boarding, pressing and mating. After the goods are dyed they must be boarded, dried and pressed. These operations are easily learned and green help become skilled at this class of work in a short time. The amount of goods an ordinary man can board and strip depends on the size and the class of work. The following table will show the work usually turned out on the different classes of goods, also the prices usually paid per hundred dozen: Ladies' wide hose, boarding and stripping, 80 doz. per day at $3.00 per hundred; boys' ribbed hose, size 8, boarding and stripping, 100 doz. per day at $2.50 per hundred; men's half hose, boarding and stripping, 100 doz. per day at $2.50 per hundred.

The number of dozen a hand will press per day depends on the style of the press. On the ordinary hot press a man should average about 300 dozen per day at about 75 cents per hundred dozen, while on presses of the Crawford type a man can press a a great many more. After the goods are pressed they are sent into the finishing room, where they are mated, stamped, ticketed, trimmed and boxed. Of these operations, the mating is the most important. Mating is very important for the reason that this is the last time the work is inspected before being sent to the trade. A mater must also be able to mend neatly. When in want of maters I have found it an excellent plan to transfer menders from the mending to the mating department. The mater girls should mate the sizes very carefully, throwing out all goods which should go for seconds and mending all holes. The number of dozen a girl will do depends on the sizes, whether goods run even or uneven, amount of mending to be done, etc. A girl usually averages about 85 dozen per day at 2 cents per dozen. The other operations in the finishing department are of minor importance, requiring but little skill and usually requiring help from 14 to 16 years of age, paid mostly by the day. I think this practically concludes all of the operations in the manufacture of hosiery where skilled help is required. It must be remembered that the figures given in regard to the amount of work an operator should do are based on the ordinary class of help. The prices quoted are taken from localities where help is scarce. In places where help is plentiful the prices might be reduced somewhat.

A HOSIERY FABRIC.

A new construction of a knit fabric, recently patented in this country, is designed to prevent the running-back of stitches cast from the needles when changing the style of knitting, as from plain to rib weave. The inventor gives the following description of the new fabric and method of knitting it.

The change from ribbed web to plain web may be effected at the junction of the top and leg, or at the junction of the leg and foot of a stocking, and the change from plain web to ribbed web may be effected after the completion of a toe pocket upon a stocking tube. In such case the casting off of the stitches from certain cylinder needles may be followed immediately by the introduction of corresponding ribbing needles for the formation of a setting-up course for the next section of ribbed web, or for the formation of the welt. Any desired number of courses of plain web may be formed upon the remaining active cylinder needles before beginning the setting-up course. In either case a transfer operation is avoided and the production of the stocking is simplified and cheapened.

Fig. 1 shows the new construction in which the change is from plain to rib web; Fig. 2 is a similar view taken from the opposite side of the web.

Supposing that the knitting machine upon which a composite ribbed and plain web is being produced is one having cylinder needles and dial needles, and that the plain web is being produced upon the cylinder needles, the stitches cannot simply be cast

from alternate cylinder needles prior to the introduction of the dial needles in their stead, nor can the stitches simply be cast from the dial needles prior to the introduction of the cylinder needles in their stead, because the stitches thus cast off have nothing to retain them and will run back under the strain to which the fabric is subjected in the knitting operation, or in subsequent use, if such use is attempted.

By running back is meant the pulling out of the cast off stitches and transforming them into elongated sinker wales intervening between the standing wales, so that there will be, at the point of junction between the plain and ribbed webs, a plain fabric of very open mesh, and of indefinite extent. Such a method of changing from plain web to rib web or from ribbed web to plain web is, therefore, commercially impracticable. To overcome the objection noted, the formation of stitches is discontinued on the standing wale needles, while continuing such formation on the needles which are to be retired. This operation continues for one or more courses, before casting the stitches from and returning the needles, the result being that the standing wales take the strain exerted upon the fabric, the discontinued wales being relieved from such strain and the running back of the stitches of the wales being prevented.

In Figs. 1, 2 and 3, the new construction is illustrated by a web in which the change is made directly from continuous plain to rib web. Fig. 4 shows a web in which, after casting off the stitches of the wales, b, a number of plain courses, g, are first knit upon the remaining cylinder needles, and a welt, h, is then formed before beginning the rib web, d.

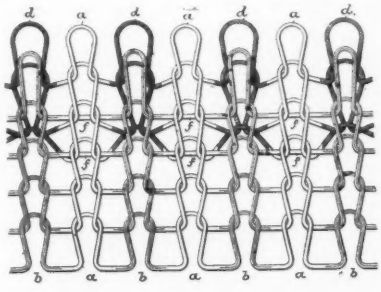


FIG. 1.

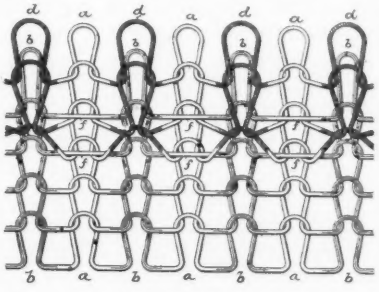


FIG. 2.

FIG. 3.

FIG. 4.

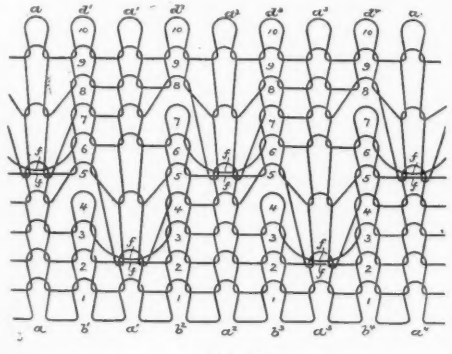


FIG. 5.

At Figs. 1 and 2 the knitting operation is arrested simultaneously upon all of the standing wale needles of the cylinder and the terminal stitches of all of the discontinued wales are in the same course. This is not a necessary feature of the new construction. In the fabric shown in Fig. 5 knitting is temporarily discontinued after the formation of course 2 upon the needles which produce standing wales, a^1 and a^3, after the formation of course 5 on the needles which produce standing wales, a, a^2 and a^4, the terminal stitches of the discontinued wales, b^1 and b^3, being in course 4, and the terminal stitches of discontinued wales, b^2 and b^4, being in course 7.

The total export trade of Porto Rico for the year ending June 30, 1907, amounted to $26,996,300, an increase of $3,738,770 over 1906.

In Belgium the newspapers left by travelers in railway trains are carefully collected and at the end of every week sent to a general depot at Malines to be used in the manufacture of pulp and cardboard.

DESIGNS FOR FANCY KNITTING.

BY F. W. HERINGTON.

Designs for fancy knitting like that shown at Fig. 150 are produced by tuck presser work on spring needle circular machines. The knitting draft is shown at Fig. 151. Fig. 152 is a section of draft, Fig. 151. Fig. 153 is also a section of the pattern showing the alternate plain courses. From it is drawn the enlarged sketch of the knitted loops, Fig. 154.

On the design paper, Figs. 151, 152, 153, each square represents a single loop of plain stitch knitting, Fig. 154, C. A double cross, XX, on the design paper inside the squares represents a tuck stitch or loop, Fig. 154, B. At Fig. 154 the tuck stitches cross the previous row of plain stitches in a straight line at the back of one or more of them (see rows 1 to 18 inclusive), the alternate courses of loops, not numbered, being the plain courses, as shown on the design, Fig. 153.

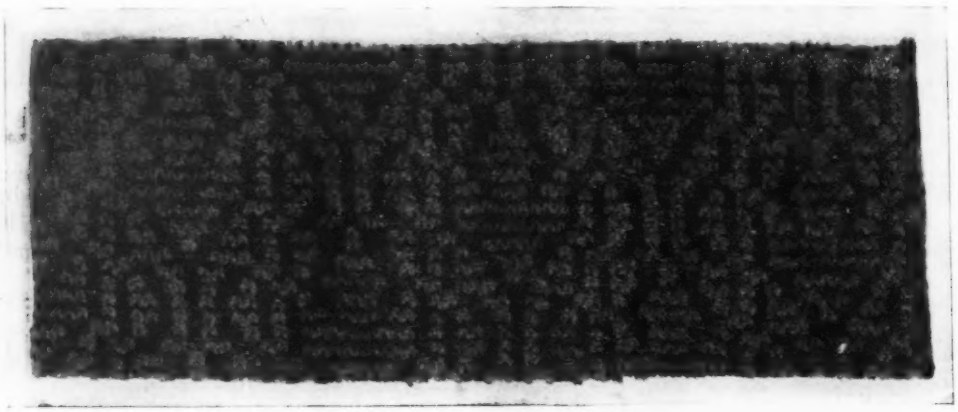


FIG. 150.

Fig. 150 is an illustration of the knitted fabric, corresponding to the design, Fig. 151, and to the enlarged loops as shown in Fig. 154. These designs can be made with a single colored thread and the tuck stitches will show the pattern, but in order to bring the pattern out more prominently two contrasting colors are used, as black and white, red and blue, etc. This design is made with four feeds on the machine, two plain presser feeds and two tuck presser feeds. It can also be made with six or eight feeds, or more, but the tuck pressers, Figs. 155 and 156, would then have to be cut in a different way.

In producing fancy designs in knitting the design is first sketched on design paper as shown at Fig. 151. In Fig. 151, A, in the left hand corner at the top, the first square in the first row represents a plain stitch, C; the next two, BB, are tuck stitches; the next two, CC, are plain; the next, B, a tuck, and so on. Counting the rows downward from A at the top, we find the design is completed in eighteen rows, the nineteenth row being the same as the first. This design, A to H, is 12 stitches wide and 18 courses long, or (12 by 18) 216 stitches in the design.

In the design shown at Fig. 134, March, 1905, six tuck pressers, Figs. 137 to 142, were used, a section of each being required to make the pattern. These sections were repeated around each tuck presser respectively. In the design at Fig. 151, notwithstanding the increased number of stitches, only two tuck pressers are used, but these are divided into nine sections. Each section is cut differently and represents one of the courses from D to E, Fig. 152. The numbers, 1 to 18, correspond to numbers on sections of tuck pressers, Figs. 155 and 156.

As this design is produced with only two tuck pressers, and consists of 216 stitches, it follows that each tuck presser must have 108 cuts each, making 216 in all. Each alternate

feed, or course of stitches, is plain, which enables the tuck stitches to be cast off, but in sketching the design, Fig. 151, only the courses for the tuck pressers are shown, it being the tuck stitches which form or produce the design. The whole design will be 12 stitches wide and 36 courses deep, as

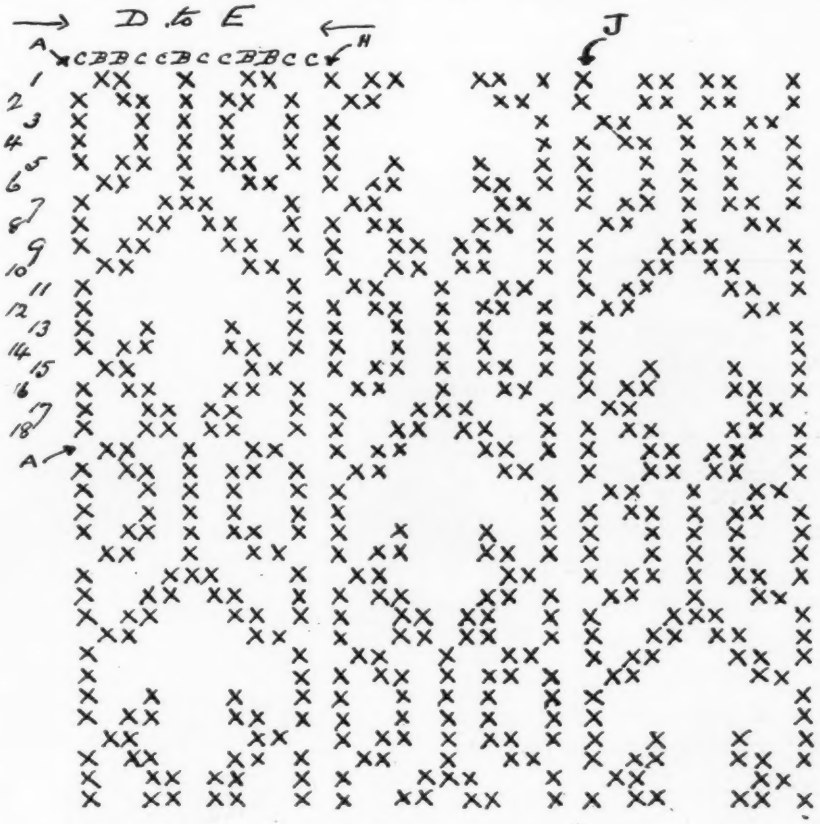


FIG. 151.

shown by the sketch of the loops, Fig. 154; those courses not numbered are the alternate courses of plain stitches.

The tuck pressers produce both plain and tuck stitches as seen in Fig. 154, 1 to 18. Where the tuck stitches, B, are formed, by not being pressed off by the tuck presser, but are held until the succeeding plain presser feed is reached, there occurs an elongation of these stitches, which are part of the previous row of plain stitches.

Where the yarn crosses in a straight line across the previous course of plain loops, B, Fig. 154, these plain loops thus held are drawn down to the next succeeding course of plain loops before being pressed off. When the tuck stitches are cast off with the previous course of plain loops, these tuck stitches cross at the back, leaving a loose thread or loop. For this reason it is not desirable in designing patterns to have more than three or four tuck stitches come together, as the length of the loose thread would thereby be increased.

Having ascertained the number of stitches required to complete the design, which in this case is 216, the next thing is to have the tuck pressers made with 108 teeth or cuts, as shown in Figs. 155 and 156, if two tuck pressers were used.

The same design would be produced with one tuck presser of 216 teeth, divided into 18 sections of 12 cuts each, and the number

of needles in the cylinder would have to be divisible by 216, leaving 12 needles over;

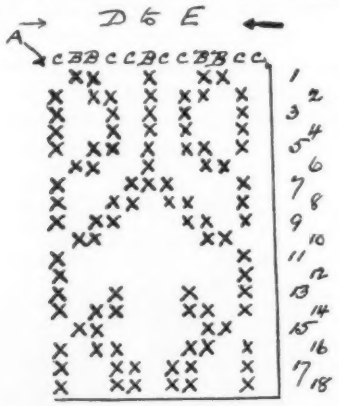


FIG. 152.

each section could follow in rotation from 1 to 18 around to the left.

The cuts for each section correspond to the

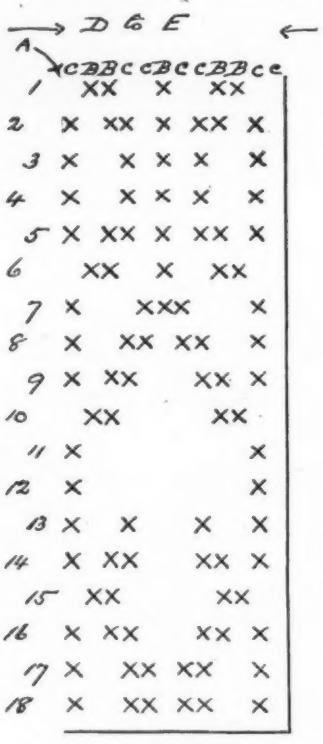


FIG. 153.

section of the design, Fig. 152. The numbers at the side of the courses correspond to the numbers on Figs. 155 and 156. Each section of the tuck pressers is read from left to right as is also the section of the design, Fig. 152.

The small indentations or cuts, C, on Figs. 155 and 156 represent the plain stitches, and

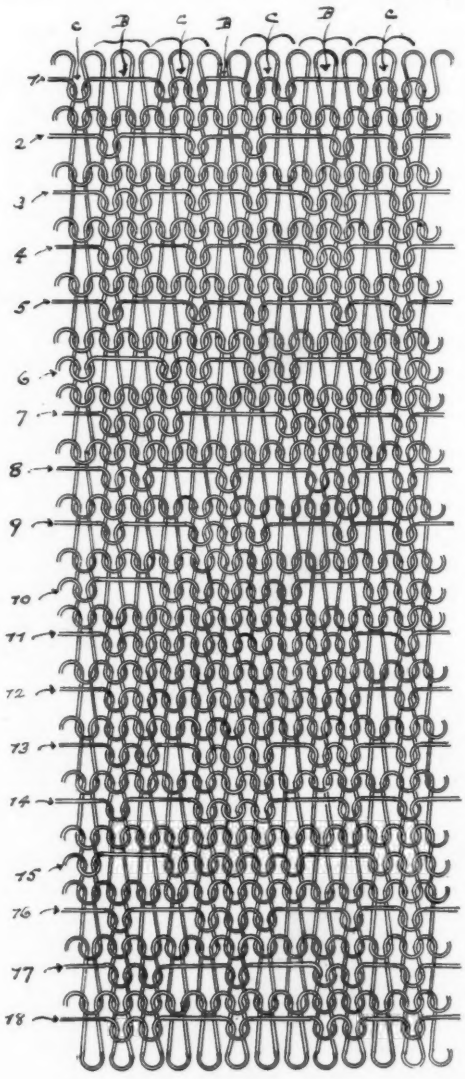


FIG. 154.

the deep cuts, B, the tuck stitches. Where the deep cuts, B, come in contact with the needles, the stitches are not pressed off, but remain on the needles until the succeeding plain presser feed is reached, when both are pressed off. The tuck stitch then becomes

the straight loop across the previous plain course of loops. When the small cuts, C, of the tuck pressers come in contact with the beards of the needles they close them, and thus produce plain stitches.

By the combination of the small and deep cuts, the tuck presser produces both plain and tuck stitches. The alternate plain feeds press off every loop.

Starting at the first course of tuck stitches at the left hand square at the top of the design, Fig. 152, marked A, and reading for the cutting of the tuck pressers, we find one plain, two tuck, two plain, one tuck, two plain, two tuck, two plain, No. 1, Fig. 155.

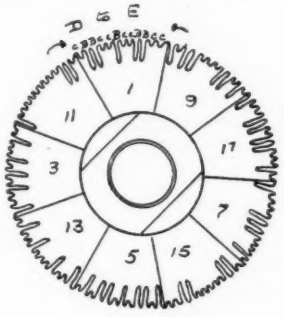


FIG. 155.

The next course is, one tuck, one plain, two tuck, one plain, one tuck, one plain, two tuck, one plain, one tuck, one plain, No. 2, Fig. 156.

The next course is, one tuck, two plain, one tuck, one plain, one tuck, one plain, one tuck, two plain, one tuck, one plain, No. 3, Fig. 155.

The next course is like No. 3 and corresponds to No. 4, Fig. 156.

The next course is like No. 2 and corresponds to No. 5, Fig. 155.

The next course is like No. 1 and corresponds to No. 6, Fig. 156.

The next course is, one tuck, three plain, three tuck, three plain, one tuck, one plain, No. 7, Fig. 155.

The next course is, one tuck, two plain, two tuck, one plain, two tuck, two plain, one tuck, one plain, No. 8, Fig. 156.

The next course is, one tuck, one plain, two tuck, three plain, two tuck, one plain, one tuck, one plain, No. 9, Fig. 155.

The next course is, one plain, two tuck, five plain, two tuck, two plain, No. 10, Fig. 156.

The next course is, one tuck, nine plain, one tuck, one plain, No. 11, Fig. 155.

The next course is like No. 11, and corresponds to No. 12, Fig. 156.

The next course is, one tuck, two plain, one tuck, three plain, one tuck, two plain, one tuck, one plain, No. 13, Fig. 155.

The next course is like No. 9, and corresponds to No. 14, Fig. 156. No. 15, Fig. 155, is like No. 10, Fig. 156; No. 16, Fig. 156, is like No. 9 and No. 14. No. 17, Fig. 155, and No. 18, Fig. 156, are like No. 8, Fig. 156.

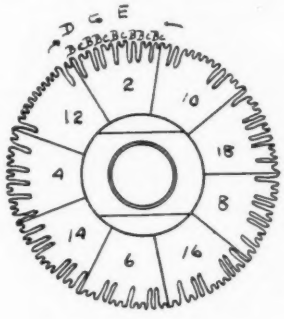


FIG. 156.

This design being produced with only two tuck pressers of 108 cuts each, and the pattern being 12 stitches wide and 18 courses deep, it follows that each presser must be divided into nine sections of 12 cuts each. Each section of the tuck pressers corresponds to one course of the design as shown in Figs. 152 and 153.

Taking the design, Fig. 151, and reading to the right from letter H, it will be seen that the twelve stitches are the same as the first twelve stitches in row, No. 9. The continuation of the top row at J, corresponds to row, No. 17. Tuck presser, Fig. 155, from left to right, starting at section marked 1 and corresponding to section 1 of the design, Fig. 151, row No. 9, must follow; next row, 17, and so on. This accounts for section No. 9 following No. 1 on the circle of the tuck presser, Fig. 155. There being two pressers, and section No. 2 following No. 1, vertically, No. 1 is on one presser and No. 2 on the

other. No. 10 follows No. 9 in the same order, and so on all around the pressers.

Further, it will be seen that row No. 3, Fig. 155, and row, No. 4, Fig. 156, are 24 cuts to the left of Nos. 1 and 2 respectively. It follows that the number of needles in the cylinder must be divisible by the number of cuts in the presser, 108, and leave 24 needles over. For example, if presser, Fig. 155, and section 1 at the extreme left, are started on a given needle and presser, Fig. 156, and section 2, at the extreme left, on the same needle, when the cylinder has made one complete revolution, the starting point of the presser will be 24 needles to the right, thus bringing the starting point of section 3 directly under the starting point of Nos. 1 and 2. After another revolution, No. 5 will be under No. 3; each revolution of the cylinder will thus bring the numbers under one another and complete the design.

Fig. 154 is an enlarged sketch of the stitches in Fig. 150, and is drawn from the section of the design, Fig. 153; letters and figures correspond.

Figs. 155 and 156 are top views only of the tuck pressers, showing how they should be cut, and the numbers in each section correspond to same numbers in Figs. 151, 152, 153 and 154.

It is important that both the first cut at the extreme left of section 1, Fig. 155, and the first cut at the extreme left of section 2, Fig. 156, be set on the same needle in starting, in order to produce the design as illustrated in Fig. 150.

If this is not done, the loops will come in a different position, and the result will be a mixture of plain and tuck stitches, without any particular design or pattern.

Rib and Tuck Stitch.

Editor Textile World Record:

Is the plain ribbed shirt as a rule a better seller than the tuck stitch shirt? We refer to heavy goods weighing say 11 to 12 pounds. What we want to know is whether, if equal quantities of the two lines were put on the market together which would be sold up first. Warner (973).

The fine or plain stitch ribbed goods are fast taking the place of tuck stitches in all weights of goods for men, women and children. I believe that if both were put to the test on the market eight out of ten customers would now take the fine stitch in preference to the tuck stitch. Fillmore.

Looping Hosiery.

Editor Textile World Record:

We are starting a small hosiery mill and are somewhat inexperienced in the business. We would like to have you give us some information regarding looping. Salmon Falls (978).

Looping hosiery or seaming across the toe is a very important process. Poor work here will make a very coarse seam, whereas with care a seam can be made that will make the two pieces practically continuous, as if they were knit together. The first essential is experienced help. The stockings are taken from the knitters and inspected for bad work and menders, after which they are turned wrong side out and made ready for looping. They are then looped and turned again, after which there is another inspection for poor looping or dropped stitches. The imperfect stockings are put to one side for repairing in the white; or they can be sent through the dye house and the imperfections repaired after finishing. I have tried both ways and prefer to do the mending after finishing. As a general rule from 10 to 20 per cent. of the goods mended in the white will break out in the dyeing and finishing. Care must be taken not to leave too long a selvage at the toe for the looper. Some knitters leave 14 to 16 rounds. I have found 10 to 12 rounds to be ample and to result in more perfect work. With a long selvage the loopers get careless and do not put the work on straight. This leaves dog ears at the start and finish of the looping. With a short selvage this is almost impossible. In addition to giving better work the short selvage results in considerable saving in waste. It will reduce the looper waste 25 per cent. as compared with the long selvage. This is a large saving on 300 dozen a day. When teaching operatives to loop they should be trained to put the work on the point straight, otherwise poor work is sure to result. Ravenswood.

Looping is the last stage in the knitting of hosiery; after this they go to the menders, etc. The looper is simple, but sometimes

gives considerable trouble. It is securely bolted to a bench; an arm running out from it carries the point plate. The points are fastened to this plate by a series of short plates and screws. These points vary in size according to the class of goods, running from 9 points per inch for 84 needle goods up. The finer the goods the more points per inch. The stockings are first turned inside out and a start made where the toe ends are run on the points. As there are generally 5 or 6 courses made by the footer after the toe is finished it is necessary that the operator start on the first course, otherwise there will be a pocket formed at each side of the toe. Care should also be taken that every stitch is on a point; if not there will be a dropped stitch.

The speed of the machine depends largely on the class of help in the mill and can be determined only by experience. It is better to start slow and increase the speed as the operator becomes more proficient. It also pays to have an experienced operator who can show the rest of the help what can be done on a machine.

The needle that does the stitching is curved and is operated by an arm from a cam on the pulley shaft. The needle must be so adjusted as to strike in the groove of the point just before it comes to the goods. If it stitches too soon it will wear both needle and points in a short time, ruin the goods, split the yarn or pull the stitch too much, making the looping too loose.

After passing through the goods the thread is caught by two hooks which holds it until the needle comes back again, when it passes between the hooks and lifts the stitch from the hooks, then recedes, comes up again and catches the thread as the needle pulls back. These hooks are in an arm which is worked by an eccentric cam on the pulley shaft and held in position by a coil spring. At the opposite end from the hooks the arm is held by a post which fits into the bed of the machine. This post has a slot in the top in which the arm is supported by a set screw on either side. These assist in adjusting the position of the hooks when passing the needle. The hooks should come just near enough to the needle to catch the thread. The guide which holds the goods on the points when looping should be close enough so that when the needle is passing the goods will not be moved. The thread is brought to the needle through a tension and a couple of eyes and over a spring. The tension and spring should be heavy enough to hold the thread when the stitch is pulled up. If too tight when running between stockings the needle will be pulled over and will either break or bend. Where ravelers are not attached the goods should be raveled on the machine before the looping is done. The prices paid for looping vary with localities and class of goods and run from 2 cents per dozen up.

Sioux.

Sizes of Kiers for Knit and Cotton Goods.

Editor Textile World Record:

What should be the size of a round kier to accommodate 500 pounds of knit cloth at one time? What size should be used to accommodate 1,000 pounds of knit cloth at one time? What size should be used to accommodate 500 pounds of cotton stock at one time? What size should be used to accommodate 1,000 pounds of cotton stock at one time? When the above questions are answered the number of pounds of material in a cubic foot of space could be figured, and consequently the proper size kier for any other quantity could be determined. Warner (972).

A round kier to hold 500 pounds of knit cloth should be 12 feet in circumference, inside measure; depth, from grating at the bottom to top of kier 5 feet. While more can be packed in a kier of this size it will be found that 500 pounds is enough for good work.

A round kier to hold 1,000 pounds of knit goods should be 14 feet in circumference, inside measure; depth from grating to top of kier, 8 feet.

A round kier to hold 500 pounds of cotton stock should be 12 ft. 6 in. in circumference inside measure; 6 ft. deep from the grating to top of kier.

A round kier to hold 1,000 lbs. cotton stock should be 15 ft. 6 in. in circumference, inside measure; depth from grating to top of kier 9 ft. These may seem to be large kiers for cotton, but when the stock is being put in it is very spongy. It depends on the man who is putting the goods in, whether he makes the kiers hold the required amount or not. Delco.

KNIT.

New Mills.

*Georgia, Rockmart. The Southern Hosiery Mills plant will be located at this place instead of at Cedartown as previously reported. The plant will be equipped and ready for manufacturing about April 1. Employment will be given to about 200 hands. Complete information of this company has been previously given.

*Illinois, Decatur. The Hinman Knitting Company, incorporated in February with a capital stock of $20,000, has leased a building and will equip a small hosiery factory as soon as possible. The officers are R. P. Hinman, pres.; H. C. Hoagland, vice pres. and treas., and C. A. Hinman, sec.

Massachusetts, Boston. The Boston Hosiery Co. has been incorporated with capital stock of $25,000, by John G. Pierce, formerly foreman of the Hub Hosiery Mills, Richard Freedman, manufacturer's selling agent, and Frederick J. White. A number of knitting machines have been set up at 294 Harrison Ave., and the manufacture of children's worsted hosiery has commenced. Mr. Pierce is in charge of the manufacturing and Mr. Freedman will take care of the selling end of the business. It is proposed to increase the equipment as business warrants it. John G. Pierce is pres.; Richard Freedman, treas.; and Fred'k J. White, clerk. Worsted yarns are bought.

*Massachusetts, Great Barrington. It is expected that the Reliable Knitting Co. will be ready to begin operations about April 1. The work of repairing the old woolen mill is progressing rapidly. As previously reported, the machinery at Canaan, Conn., will be removed to this place and a number of new knitting machines added.

New York, New York. Stephen Rechner has opened a store at 236 E. 45th St. and is removing his knitting plant to this address.

*North Carolina, Rougemont. The report printed last December to the effect that H. L. Carver and associates were planning to establish a hosiery mill, is again current. They desire information on knitting machinery.

Pennsylvania, Philadelphia. The Bell Hosiery Co., who have secured temporary quarters at Mascher & York Sts., will have for its officers, when incorporated, Joseph Derk, pres., Jacob Keinel, treas., and J. D. Parke, supt. and buyer. The plant, which will be run on ladies and half hose, 200 needle goods, will contain 100 latch needle knitters, 15 loopers and 2 welters. They buy 14's to 32's C. P. & C. E. yarns.

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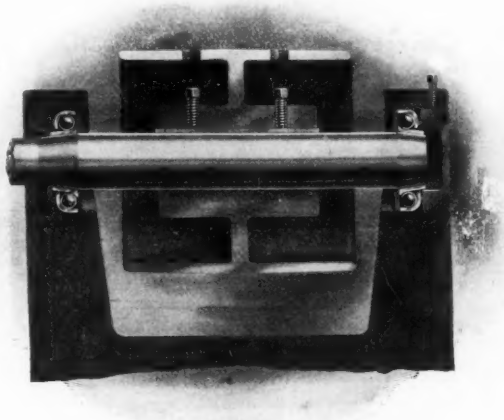

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KNIT.

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Massachusetts, Boston. The Boston Hosiery Co. has been incorporated with capital stock of $25,000, by John G. Pierce, formerly foreman of the Hub Hosiery Mills, Richard Freedman, manufacturer's selling agent, and Frederick J. White. A number of knitting machines have been set up at 294 Harrison Ave., and the manufacture of children's worsted hosiery has commenced. Mr. Pierce is in charge of the manufacturing and Mr. Freedman will take care of the selling end of the business. It is proposed to increase the equipment as business warrants it. John G. Pierce is pres.; Richard Freedman, treas.; and Fred'k J. White, clerk. Worsted yarns are bought.

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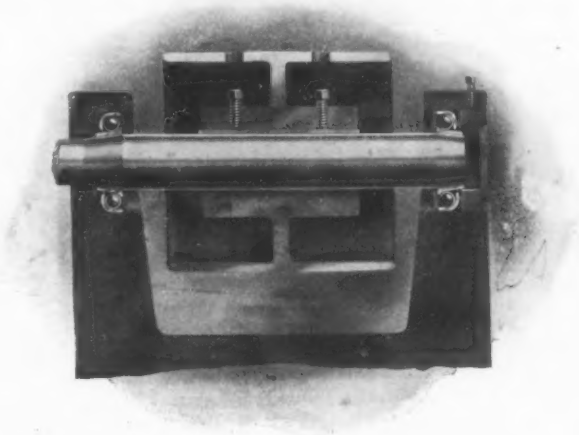

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The convertible type with bearings formed in the hanger and with overhung wheel is made in sizes up to and including 60 inch diameter of shell. In larger sizes the ordinary form of casing construction is employed and the bearings are of necessity constructed as independent boxes to be bolted on to the supports. In the larger fans the bearings contain two ball races instead of one, as in the case of the smaller sizes. Two case hardened cups are forced back to back into a circular containing ring; a sleeve is placed at the middle, upon each end of which is forced a case hardened cone. The whole, including balls, is held on pivot centre of the ball and socket type by which self alignment is secured. The bearings, each of which is entirely independent of the fan, are bolted to cross bars, supported by angle iron uprights, both securely riveted to the fan sheet. The fan shaft is slipped through the sleeve.

In both types the balls are protected from dust by easily removable washers. Freedom from leakage of oil, pollution of air by odors of heated oil and soiling of surfaces with which the oil may come in contact are advantages following this special construction.

Careful tests recently made with two 35-in. Massachusetts fans, showed that the power requirements of the ball bearing fan were 10 per cent. less than for the fan equipped with plain babbited bearings.

The raw cotton exported from India during 1906-7 was 7,396,591 hundred weight, the principal purchaser being Japan, which took 1,728,958 hundred weight. The total value of the crop was $73,218,910.

According to a consular report the total number of wage earners in Canada in 1905 was 391,487, the total wages paid amounting to $164,394,490. In five years the average wage per employe had increased $90.47.

A LOOM PICKER.

The objects of a new construction for a loom picker, recently patented, are lighter weight, increased durability, reduced friction, and more accurate adjustment. The inventor states the difficulties with the ordinary pickers and describes the new one as follows: Pickers are ordinarily composed of raw hide, leather, canvas or similar material for the reason that the picker must necessarily be light in weight to properly perform its function. Such pickers are of limited durability for two reasons. The raw hide end of the picker is more or less rapidly worn away by its contact with the shuttle tip and in consequence ceases to drive the shuttle with the requisite precision; the bearing in the opposite end or base of the picker where it is mounted upon the spindle is burned out by the friction and heat of the rapid movement upon the spindle, causing the picker to sag and to drag upon the bottom of the shuttle box where it is apt to become covered with oil. The sagging of the picker throws the picker end more or less completely out of alignment with the shuttle tip.

From any or all of these causes the pickers in use at present soon become useless and have to be replaced. The oil used to lubricate the spindle and ease the run of the pickers is, by the rapid movement of the latter, thrown both upon the shuttle, the shuttle box, and upon the yarn or cloth in process of weaving. The end of the raw hide picker which comes in contact with the shuttle tip cannot be kept in strict alignment so as to clear the edge of the shuttle box. When the shuttle tip does strike true in the center of the picker end which becomes worn concave, a crooked throw of the shuttle results.

Fig. 1 is a side view of the picker; Fig. 2 is a vertical section along the line, 2-2, Fig. 1; Fig. 3 is a perspective top view; Fig. 4 shows the picker in position. The picker consists of a base in which the ball bearings are located, and a short arm terminating in a head. The way in which it is mounted on the spindle is shown at Fig. 2. The balls in the bearings have two movements, a roll-

ing motion upon the axes and a forward helical movement about the axes of the spindles, following the groovings.

The arm of the picker extending from the mounted base terminates in a head, as shown at Figs. 1 and 3. This head is a cylindrical internally threaded shell into which a bushing is screwed. The latter is likewise internally threaded and a plug, preferably of raw hide, is screwed therein. When the face of the plug becomes worn by contact with the shuttle tip the plug can be readily removed and a new one inserted in the head of the picker, thus doing away with the necessity for substituting an entire new picker.

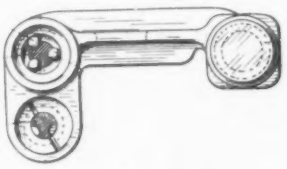


FIG. 1.

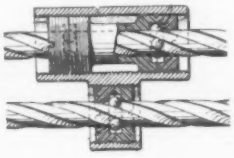


FIG. 2.

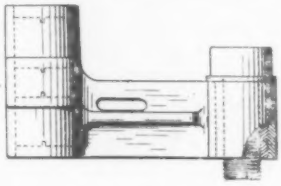


FIG. 3.

In Fig. 4 the shuttle is located in the lowermost shuttle box, the under side of the web of the picker being cut out, as shown in Fig. 1, to fit the edge of the shuttle box. This serves not only to control the throw of the shuttle but also to guide the action of the picker. The shuttle box is supported by the vertical rod.

FIG. 4

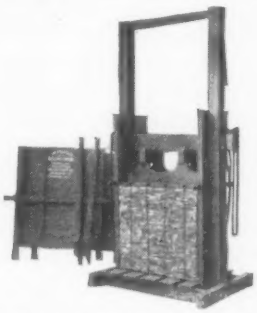
The use of two parallel spindles, one of which is adjustably bracketed in the loom frame results in perfect alignment between the shuttle tip and the center of the picker plug. The plug, which is usually of raw hide, becomes worn concave and unless a slight raising or lowering of the picker head and its plug can be effected a crooked throw of the shuttle is liable to result. By the new arrangement of parts the set screws may be loosened and the upper spindle may be slightly turned, thus moving the lower spindle toward the shuttle and elevating the picker head and plug, or moving the lower spindle away from the shuttle, which correspondingly depresses the picker plug.

The bushing is composed of a metal harder than that of which the picker is made.

THE SULLIVAN HAND BALING PRESS.

A hand baling press which is easily transported from one part of a building to another and adapted for baling loose stock, rags and similar materials, is built by the Sullivan Machinery Co., Claremont, N. H. The Sullivan press has been in use in cotton, woolen, paper and pulp mills for the past 30 years, during which time its merits have been clearly demonstrated. Many improvements have been made from time to time and the builders are now confident that no better hand baling press is offered to the trade.

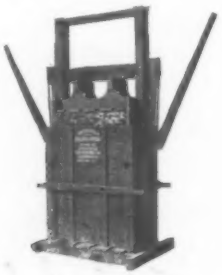
The press is made of the best selected stock, in a thoroughly workmanlike manner, designed to combine the greatest strength



and durability. At the same time it is simple in construction, with few working parts, and may easily be operated by either one or two men. One person with a 24 by 48-inch Sullivan press can make a two foot by four foot bale of woolen waste, weighing about 500 pounds.

The operation of baling consists merely in pulling down the follower, which is the part compressing the material in the box of the

press, by means of the cross-beam, which is in turn forced down by the hand levers. The levers are connected with the cross-bar by steel links suspended from each end of the bar, and are operated by engaging the tip of the lever in the iron racks on each side, one or two teeth at a time, and pulling the levers down. The beam is held down, while the up-sweep of lever is being made,



by means of the long hooks, suspended from each end of the beam between the links and the upright posts, which catch in the teeth of the racks.

When the material is sufficiently compressed, the front side board is removed, and the ropes or bands fastened; the latter having been previously placed in the bottom of the press, in the spaces left for them, before any material was put in, and brought up over the side boards with the ends left hanging outside. When the follower is put on for the final compression, the ropes or bands are brought over the top of the bale through the spaces in the under side of the follower, corresponding to those in the bottom of the press. The ropes are, of course, tied or fastened securely before the pressure on the bale is released. The bale being now ready to remove, the pressure is relieved and the follower taken off. The cross-beam, with the links and hooks hanging upon it, may be held up at the top of the standards, by means of the wooden latches or buttons provided at each end for the purpose.

Further information can be obtained by application to the manufacturers.

In proportion to its size, Piedmont, Italy, is perhaps the most prolific silkworm district of the world, the yield during 1906 amounting to 11,001,647 pounds.

AN IMPROVED COTTON COMBER.

A modification of the Heilmann cotton comber, invented in Bolton, Eng., and recently patented in this country, is intended to simplify the construction of the machine and increase its efficiency. It consists of mechanism for raising and lowering the top detaching rollers direct from the nipper shaft, comprising a combination of suitable

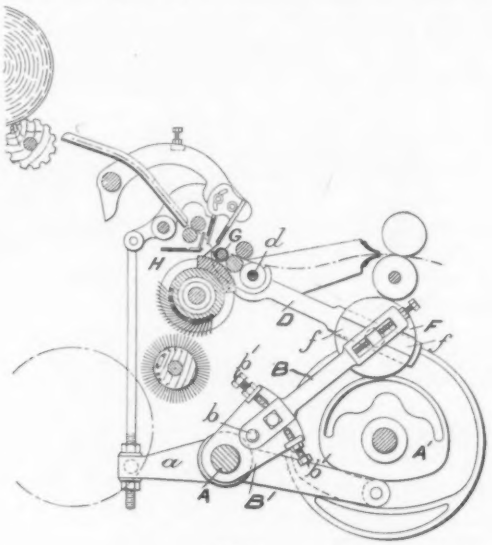


FIG. 1.

levers and dispensing with the separate cams and levers hitherto employed for the purpose.

Fig. 1 is a transverse sectional elevation of the new comber; Fig. 2, a perspective view of the various parts.

The main parts of the comber are of the ordinary Heilmann construction. One cam shaft and the cams thereon and the levers hitherto employed for raising and lowering the top detaching roller are dispensed with. The nipper shaft, A, the cam, A', for actuating it and the cam lever, a, are also constructed as heretofore. To the nipper shaft, A, is affixed an adjustable arm, B, which oscillates with the shaft. A bracket, B', is screwed or keyed fast to the shaft and provided with a pin or stud, b, upon which the lever, B, is pivoted and is held rigidly in position by two set screws, b', one on either side. The position of the lever, A, is adjusted to

a limited extent in either direction by the set screws, b'. These set screws project through lugs at either side of the bracket.

The lever, B, on the nipper shaft, A, is adjustably connected with a lifter lever, D, mounted upon the lifter shaft, d, which is journaled in bearings in the usual way, so that the movement given to the lever, B, by the nipper shaft is transmitted to the lifting lever, D, and the detaching roller, G.

The connection between the lever, B, and the lever, D, is effected by means of a stud, E, adjustably affixed to the end of the lever, B, on which is a bowl or runner and which takes into a groove, f, in the face of an adjustable disk, F, fitted on the end of the lever, D. The position of the stud, E, in the end of the lever, B, is preferably made adjustable to vary the throw of the lever, D, as may be required. The disk, F, is fitted onto the lever, D, and is made in two parts, one of which is provided with a groove, f, to receive the end of the stud, E. The other part is affixed to the lever, D, its position on

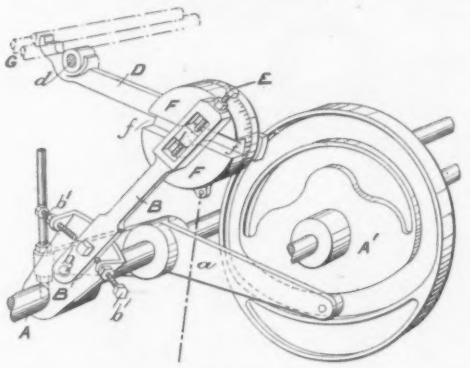


FIG. 2.

the lever nearer to or further from the fulcrum, that is the lifter shaft, d, can be adjusted as may be required.

The part of the disk, F, carrying the groove, f, is affixed to the other part by a bolt or screw so that the inclination of the groove relatively to the lever, D, can be altered and adjusted as required. The lever, D, at its upper end carries the top detaching roller, G, and as it is oscillated by the lever, B, the roller, G, is moved to and from the cylinder, H. By altering the position of the part of the disk, F, carrying the groove, f, relatively to the lever, B, the duration of the dwell of the top detaching roller upon the fluted segment of the cylinder can be regulated.

To the lower end of the lever, D, or to the disk, F, a band or chain is attached passing over a pulley to support a weight to balance the detaching rollers, being about equal to that applied to the rollers. By this construction it is said to be possible to regulate the dwell of the top detaching roller upon the fluted segment to suit any class of cotton or obtain any desired percentage of waste. It also results in much better piecings and lighter running of the machine, the evenness and strength of yarn being greatly improved.

Bleaching Cotton Yarn in the Skein.

Editor Textile World Record:

Kindly inform me the best method of bleaching cotton yarn in the skein? Mason (983).

The latest and probably the best method of bleaching cotton yarn in the skein is by the chain system, especially if large quantities are to be bleached. If the production is small I would advise the old system of vats, sticks and horses. The advantages of the chain system include less handling, reduction of the cost of labor, increased production and more uniform work. Every practical man knows of the high cost of handling yarn by the old method.

To obtain an even bleach the material must be handled in bundles before boiling, opened out, washed in the vat, turned and handled in the chemic vat until the process is completed. By the chain system the process is similar to that of bleaching piece goods in the rope form. The most objectionable part of the chain method is linking up the skeins and afterwards opening the links. The operatives, however, soon become very expert at this work. The remainder of the chain process is carried on in the machine and pits. If the pits are built in the right way the chemicking, washing and scouring can be done as the goods lie in the pits. This saves a large amount of labor and enables a greater quantity of goods to be handled at the same time. There is also a saving of bleaching materials. The liquor is pumped from the pits into a storage vat and used over again. Dulcimer.

THE PHILADELPHIA HIGH SPEED CROSS QUILLER.

The Oswald Lever Co., Lehigh Ave. and Mascher St., Philadelphia, have just put on the market an improved cross traverse quilling machine to wind from skeins, spools or mule cops on to quills or paper tubes. It is built to run from 1,800 to 2,400 revolutions per minute. Among the advantages pointed out by the manufacturers are the following: A vibrating thread guide gives a uniform cross traverse which works close to the quill and by laying the thread in the proper place makes a solid, hard quill with no open spaces between the cross.

This quiller is fitted with a very simple stop-motion, which stops the spindle promptly when the end breaks and also stops it should there be any obstruction or tangle in the yarn or skein. Special attachments may be applied, such as positive and other tensions for various kinds of work.

The Oswald Lever Company has had long experience in building quillers and winders, and this latest product embodies the result of their experience in this work, and they have aimed to produce the simplest possible machine, one that is easy to manipulate and is as near "fool proof" as possible. They claim that it costs little or nothing to keep in repair, the first cost being the only cost. Further information may be obtained from the manufacturers.

HIGH SPEED CROSS QUILLER.

It is estimated that there are about 200 cotton factories in Brazil with 1,300,000 spindles and 45,000 looms.

Dyeing, Bleaching, Printing, Etc.

BLEACHING WOOL STOCK WITH PEROXIDE OF SODIUM.

From the Dyer and Calico Printer.

Bleaching with sodium peroxide consists of obtaining an alkaline solution of hydrogen peroxide, and then, by the action of the fibre, a liberation of an atom of oxygen from each molecule of the hydrogen peroxide solution. The oxygen is in a nascent condition and attacks the coloring matter present, and oxidizes it to a colorless body. A great deal of the success and usefulness of the process depends upon the nature of the coloring matter present in the fiber. Natural wools have a slight yellow tint, and a darker yellow tint in some of the fibers, in natural grey wools brown and black fibers are mixed with yellow ones.

In shoddy goods there is the coloring matter with which the material has been previously dyed, and it is possible to remove much color from any material which has been dyed with indigo, or from any in which an oxidizing action has been used in the previous dyeing operation. Very good results can be obtained from any material which has been dyed with acid dyes. In any case a small sample of the material can be tried to judge if it will pay to bleach with sodium peroxide.

With natural wools the best results are obtained with the yellow fibers; the coloring matter in these seems to be more easily oxidized than in the grey wools. In the brown and black the color can be removed, but it finally costs more for bleaching than the purchase of a better sample of wool in the first instance. However the brown fibers can be oxidized to a light yellowish brown and the black fibers will give a dark brown. With shoddy goods, a much better result is obtained if they are given a preliminary stripping with ammonia; this seems to loosen the coloring matter. One great advantage of the peroxide bleach is that it does not affect the lustre of the wool; if anything, it tends to increase it.

The bleaching can be done in a wooden vessel, which must be heated with a lead coil. If an open steam pipe is used, the liquor is liable to become contaminated by impurities out of the pipe and also in the steam. Copper must not enter the bleaching bath because there is a probability of copper salts forming, and if any of these are present the oxygen will be liberated at an abnormally high speed, thus causing a great waste of available gas. Iron must not be allowed in the solution because this forms brown iron salts which stain the material. All sodium peroxide contains a small percentage of iron, as the apparatus used in the manufacture is made of iron. If this is allowed to go into the solution in an uncombined condition, after the bath has been used a few times, there will be sufficient iron present to cause a discoloration of the whole bulk of the material. To remedy this, sodium phosphate is added, in the proportion of about 1/2 ounce phosphate to every pound of peroxide. The phosphate combines with the iron to form a soluble salt, thus keeping it in solution, and at the same time in a harmless condition.

To make up a very useful bleaching solution, a good proportion is to take, for every 6,000 (720 gallons) of water,

10 lbs. sulphuric acid (168° Tw.),
7 lbs. sodium peroxide,
¼ lb. sodium phosphate.

The sulphuric acid and sodium phosphate are first put into the water, and the sodium peroxide is gradually added with constant stirring. With the above proportions the bath will be found to be about neutral; if it should be still acid a good plan is to add small quantities of sodium peroxide until it is just alkaline, and then make it acid by the addition of dilute sulphuric acid.

The bath is gradually warmed up while the sodium peroxide is being added; this facilitates solution. The bath is now given a good stirring for a few minutes and then allowed to stand for 5 or 10 minutes; this is necessary to be sure that all the sodium peroxide is dissolved, otherwise if any gets on the ma-

terial in an undissolved condition, it will cause it to become tendered.

A white scum will have formed upon the surface of the solution. This is carefully removed, and then sufficient alkali is added to make the bath alkaline. The degree of alkalinity can be regulated in conjunction with the temperature of the bath; the hotter the solution the less the degree of alkalinity. The best temperature to work is between 120° and 160° F. In all cases the bath must always be alkaline when being used. The alkalies generally used are silicate of soda, ammonia or borax. One great objection to using silicate is that after the bath has been used, upon making it acid for the following batch, an insoluble precipitate of H_2SiO_3 is thrown out, which spoils the bath. Ammonia is rather quick in its action and causes the oxygen to be liberated rather quickly. Borax is very weak, but has neither of the objections that apply to silicate and ammonia, but it can be used to advantage by mixing it with ammonia.

Having made the bath the required degree of heat and alkalinity, the material is now put in as quickly and evenly as possible, and then pushed well under the liquor. It is then fastened down by means of a light wooden frame. This must be at least two or three inches below the surface of the liquor; otherwise, if any of the material becomes exposed, stains are the result. The same thing occurs if the vat and cover are allowed to get dirty.

The vat may be covered with a heavy piece of canvas to keep in the heat. If the material is put in overnight it will be ready for taking out next morning. The material must be thoroughly cleansed from all soap, otherwise it will be impossible to use the vat continuously. To keep the bath till it is next required make it slightly acid, and, of course, bring it up to strength immediately before it is to be used.

Eighty-two million pounds of clothing wool, 10 million pounds of combing wool and 110 pounds of carpet wool were imported into the United States in the year ending July 1, 1907, representing a value of 41 1/2 millions of dollars.

THE FINISHING OF COTTON GOODS.

(Continued from September.)

When a piece of cloth is passed singly through a hot glazing calender every thread is affected similarly, it becomes uniformly glazed, and presents a uniform appearance, but if one of the bowls be engraved with fine lines passing diagonally round the bowl, then some threads are glazed, while the contiguous threads are not affected; they have thus imparted to them the property of reflecting light in different degrees, and the effect produced is very peculiar, not easy to describe, but is well known as watering or moiring.

These moiring or watering calenders have usually three bowls (although two will answer if so required), the top and bottom bowl being made of cotton, and the middle of steel, engraved with fine lines running round the roller. This middle roller travels quicker than the cotton bowls, so that there is some friction on the cloth. Further, the cloth is made to move to and fro sideways, i. e., an oscillating motion is imparted to it, as it passes through the calender. The middle bowl, i. e., the engraved steel roller, is heated.

By varying the manner in which the lines are engraved on the steel bowl—making them close together, far apart, fine, coarse, straight, round, or diagonal—a variety of watering effects can be produced. To obtain the best effects, it is necessary that the cloth should be slightly damp before watering, and the watering bowl hot.

For watering finishes, the process generally adopted is thus: Stiffen on first mangle, dry on cylinders, then again stiffen on a second mangle, dry over cylinders, dampen, calender without pressure, one nip, dampen again, then water on watering calender and make up.

Recipes for mixing are:

(1) Four cans sago flour, 2 cans fish glue size (1 lb. glue to 1/2 gal. of water), 2 lbs. cocoanut oil softening, 2 lbs. wax; make up to 120 gallons.

(2) Four cans starch, 2 cans farina, 4 lbs. white soap softening, 2 lbs. wax; make up to 120 gallons.

A stiffness to the fabric will be produced thus:

(3) Six cans sago flour, 2 cans farina, 4 lbs. white soap softening, 2 lbs. wax; make 120 gallons of mixing, or

(4) Six cans starch, 3 cans sago flour, 4 cans glue size (1 lb. glue to 1/2 gal. water), 3 lbs. wax; make 120 gallons mixing.

The finishing of curtains and laces is a most important operation in connection with these fabrics, consequently calling for the utmost care besides experience on the part of the finisher, for the fact that the meshes, as compose the fabric, must be kept fully extended and in shape, a proper amount and quality of the stiffening mass used preventing their collapse. The bleached or dyed goods in the process having been singed, washed and dried in a hot room, are passed through a hot mixture of gum and starch, and passed between revolving cylinders before leaving the trough in order to press out all surplus stiffening fluid, after which they are taken to the stretching room and placed with their edges on two frames, the heat of the room being kept at 80° F. and above, never below.

By means of the side of the frames then being made to recede, the lace is then gradually drawn out to its full width, the utmost care being taken not to disturb the meshes of the structure, for upon this feature the quality and value of the article depend.

The amount of stiffening and weight for single, double, and triple stiffness, also the color, clearness, crispness, and the elasticity of the fabric thus treated must be carefully considered. To insure freedom from small blotches of stiffening on the fabric, as well as to prevent impurities from clinging to the meshes, the fabrics are carefully lightly rubbed with flannels, so as to equalize the stiffening, after which they are then gently beaten by switches and rods as they are distending, a process which will promote their rapid drying, presenting a clean face and imparting elasticity to the fabric. The goods are then fanned by strong currents of air, and then carefully rolled up.

The heavy sizing as necessary to be imparted to the fabric will greatly increase their weight, two, three and up to four times the weight of the unfinished fabric, producing with the last quoted amount of weighting a fabric, the edges of which will be sharp like a saw; all nets for foundations as articles of female attire being thus weighted and stiffened. This will readily explain that on account of the importance of the weighting and stiffening processes to these fabrics, the greatest of care in connection with the proper selection of the articles for finishing must be exercised, they must be properly tested, i. e., the starch before use must be tested with reference to its purity of color,

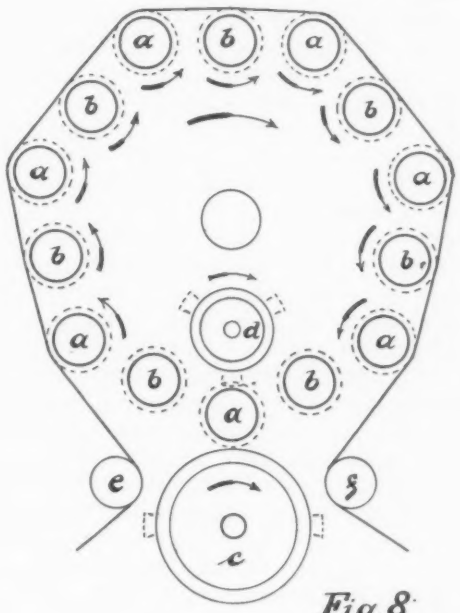


Fig. 8

whether it possesses the constituents for forming a good paste, has freedom from lumps, and will in boiling water swell into a thick jelly, together with its powers of absorbing water, all being requisites for a first class starch for the finishing of lace fabrics.

Cotton fabrics to imitate wool, such as suitings, flannelettes, etc., require a short nap raised on both sides of the fabric by means of napping and shearing in order to give them a good appearance, for the commission merchant and in turn the consumer. On account of the importance of these fabrics to cotton manufacturers, we will now

give a description of these two processes more in detail, knowing that they will be appreciated by the reader.

Napping. The use of nappers in finishing cotton goods has long passed its experimental stage, in fact in connection with fabrics quoted before, they have become a necessary adjunct to the finishing room of any cotton mill.

The napper itself consists of a series of workers or napping rolls mounted upon a large cylinder, rotating in one direction, while the motion imparted to the individual workers is in the reverse direction. By means of suitably placed application rolls, which can be controlled simultaneously, the contact of the cloth with the wire clothing of the workers is regulated, the production of the machine depending to a considerable extent upon the number of contacts the cloth has with the napping rolls. All nappers are provided with a cleaning device of some kind of construction and which keeps the workers or napping rolls always in the same clean condition, and when therefore each contact of them with the cloth is of uniform efficiency.

To imitate the teasel point, or at least the elasticity of the teasel point, has been the chief aim of all inventors of napping machinery, and we must acknowledge that most of them have succeeded admirably.

The efficiency of the napper being constant and known to the operator, it will be readily seen that any piece of cloth run through the napper will get practically the same amount of gigging as another piece, provided the application of the fabric to the action of the workers is not varied, and the number of runs given equal to that of the first piece.

The principle of construction of all nappers, to a certain extent, is identical, the chief difference being found in their mode of contact, the number of these contacts, and the number of workers.

Napping machinery was introduced into this country from France somewhat over twenty years ago, the machine then consisting of a series of rollers (workers) arranged in a circle around a common shaft forming a cylinder similar to a teasel drum. The wires of these workers pointed forward or in the same direction as the cylinder revolved, while at the same time each worker turned around its own axis backwards. It is apparent that if the surface speed of the workers around their own axis backwards would be equal to the surface speed of the drum (formed by these workers) forwards, that the workers would roll over, without working, any goods brought in contact with them. Only when the surface speed of these workers backwards became less than that of the drum forwards, could these workers do any work. The difference between these two speeds is called the "energy of the machine" and all napping machines in use today are provided with some mechanism by which the speed of the napping rollers can be varied as much as is necessary to produce certain results of naps. In the older napping machines, the goods were brought in contact with the periphery of this drum by being stretched under and over rollers forming tangents to the outer circle of the drum.

By this method, however, the fibre is dragged out parallel to the face of the fabric, and because the rollers or workers are not in constant contact with the fabric, when a worker comes in contact with the fabric, it strikes the tightly stretched fabric so hard that it causes the same to vibrate and some of the points of the wire will let go of the thread where they have taken hold and slip over a certain space before they take hold again and thereby produce an uneven nap.

We will now describe the construction and operation of a modern napper. In this machine the drum carries around its periphery the napping rolls which are divided into two series, each series comprising every alternate roll, the rolls in one series being situated farther from the axis of the drum than the rolls of the other series. The clothing on the outer series of rolls is arranged to have its wires point in one direction, while the wires on the inner series of rolls point in the opposite direction.

In order to give an idea of the working of this napper to the reader, the accompanying diagram, Fig. 8, is given, showing the relation of the two sets of workers or napping rolls in the machine to the cloth to be napped. From this illustration it will be

seen that the fabrics to be napped are constantly in contact with the wire points of the clothing of the workers, with the exception of three rolls at a time, and which then are under the action of the cleaners.

The principle of napping by this machine is based upon the relative surface speeds between the cloth under operation and the drum of the napping rolls. Taking the conditions as given in the illustration, and supposing that the teeth of the clothing of the outer series of rolls, a, point in a forward direction with reference to the direction of rotation of the drum and the direction of axile rotation of the napping rolls opposite to that of the drum, and the clothing being passed in the same direction as said drum revolves, it will be readily understood by the reader that in order to produce any napping by this outer series of napping rolls, a, the surface speed of the drum must be greater than the surface speed of the napping rolls in relation to their own axes, and the surface speed of the cloth must be less than the difference in speed between said drum and napping roll, in order that the outer surface or point of contact of the napping roll with the cloth should move in a forward direction and at the same time should be faster than the speed of the cloth, in order to have a pull or drag on the fibres with which the points of the teeth come in contact. The main shaft of the napper, as carrying the drum, has the driving pulley secured to it, while the outer series of napping rolls is driven from the right end and the inner series from the left end of the machine, thus allowing the rate of speed of these two series of napping rolls to be varied independently of each other when required.

From the illustration it will be seen that all of the napping rolls, a and b, are rotated in the same direction as indicated by the arrows, but as stated before, by making the surface speed of the outer series of rolls, a, less than the drum, they will revolve in a forward direction, and owing to the direction of its wire points will nap the goods.

On the other hand, the series of inner napping rolls, b, are driven more rapidly than the drum, that is, in surface speed, so that the rolls of this series will have a backward motion with relation to the direction of the revolution of the drum, and owing to the direction of wire points, will also nap the cloth. The relative speed of the napping rollers in this machine is controlled by change gears, thus enabling the machine to always produce the same energy on a certain class of goods.

The cleaning of these two series of napping rolls is done by placing one cleaner, c, outside and another, d, inside of the drum, both being positively driven by gears. The outside cleaner, c, then will clean the inner series, b, of napping rolls, while the inside situated cleaner, d, will clean the outer series, a, of napping rolls. e and f are guide rollers.

Shearing. On all ordinary cotton goods the shear blades are used not for trimming off the nap of the fibres to an even length, as on most woolen goods, but rather for cutting off projecting threads and fibres so as to leave the fabric perfectly smooth and free from protruding ends.

The main object with cotton flannel and similar popular fabrics is to give them after napping, by means of shearing, a good appearance, an evenness of the nap only, whereas in connection with other goods not napped, shearing is done for the trimming off of the natural nap of the fibres to an even length. The greatest of care on the part of the operator is required in order to keep the shear in good condition. It is of the greatest of importance that he understands its working, and carefully attends to its proper setting and running, in many instances want of judgment and neglect in this matter causing damage to the fabric under operation.

The most important parts of the shear are its cylinder and ledger blade, i. e., the cutting device of the machine, and upon its proper condition and adjustment the success of the process of shearing more particularly depends. The larger the cylinder, the fewer its revolutions required, and since then there are more cutting edges presented at one of its revolutions to the fabric, they will consequently keep longer in order, the blades are not so apt to get hot by friction, and a better finish the result. The temper of the blades differ considerably, if too hard they

are brittle, again if too soft, a frequent grinding is necessary.

The most important work for the shear tender is to keep the blades in good cutting condition. If dull, grinding must be resorted to, again an operation requiring experience and good judgment on the part of the operator. For this work reverse the cylinder belt and cover up all the exposed parts of the machine, and when the grinding may commence. The finest and best emery powder, made into a thin paste with a good, clear oil, not too thick, should be used. A good mixture may be made of equal parts of No. 120 and flour of emery mixed with good lard oil to a thick paste, and when the grinding is nearly completed, finish up with a mixture of flour of emery and oil. This mixture is spread on a strap fastened to a piece of wood a few inches wide and a foot long. The paste is thus transferred all along the cylinder as evenly as possible, pouring out thin oil frequently to wash the emery down on the blades. Continue grinding until a thin knife edge is got on the ledger and the cutters of the cylinder are sharp. It is a good policy to change the place of beginning to apply the fiddle each time a fresh supply of emery is applied, since wherever the fiddle is first applied, that part is sure to get the most grinding and in this way things can be kept nearly even.

The cylinder is then taken out, and a hone applied to the ledger blade, using a 25° slant towards the rest, and a very thin bevel will be produced on the edge of the blade.

The grinding being finished, the back of the cylinder blades is run over with a whetstone or fine file to take off the feather edge, if there is any, and all must then be wiped clean. The cylinder is then put in, and a trial made to cut wet paper; if not correct, the ledger blade is raised all along by the top set screws. With proper care on the part of the shear tender, grinding need not be resorted to more than once in about four weeks.

A HOIST FOR DYE VATS.

This hoist, recently patented, makes it possible to drive the carriage and operate the yarn-frame drums with the same motor. Fig. 1 is a plan showing the mechanism; Fig. 2, a side view; Fig. 3, an elevation showing the hoist and dye vat. The carriage is mounted on rails directly above one or more dye vats and arranged to be mounted on the dye vat is the yarn frame from which the yarn is suspended. If the yarn in the dye vat is to be removed, the carriage is placed in position directly over the vat, the chains attached to the yarn frame and the motor shifted so as to allow

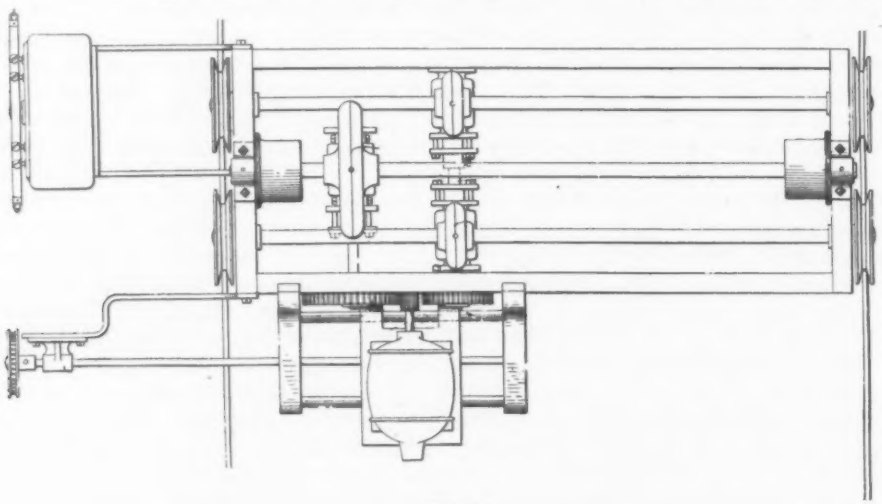


FIG. 1.

its pinion to mesh with the wheel. The controller arm is then shifted so as to throw power into the motor so that it will turn in one direction, coiling the chains upon the drums and lifting the frame out of the vat.

After it has reached a certain height, the motor is stopped, and is shifted so that its pinion will disengage the wheel and engage a gear wheel, the worm wheel holding the shaft in position. The controller arm is then moved so as to throw power into the motor again and the carriage moves the frame to one side of the vat when the dyed yarn can be removed and other yarn placed in position, when the frame is moved over the vat and lowered.

By making the worm wheel connections,

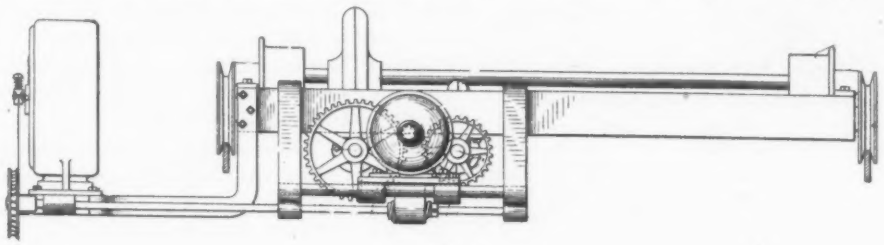


FIG. 2.

as shown, each of the shafts are locked when the motor is out of gear, so that there is no liability of the parts being shifted after the power is cut off. Both the shafts are driven

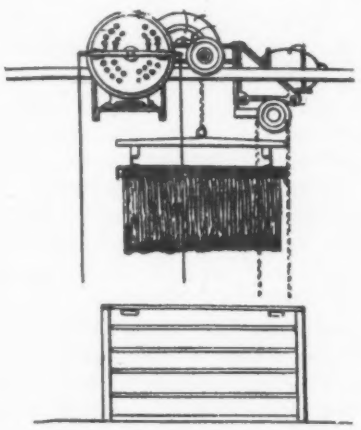


FIG. 3.

from the motor, but it will be understood that in some instances it may be necessary only to drive one of the shafts.

Bleaching Merino Goods.

Editor Textile World Record:

Where can I get the best information on bleaching merino goods; that is, cotton and worsted mixed? I have used brimstone, but that takes away too much of the woolly feel. We have used peroxide, but that is too expensive for our class of work. We must have something that will give the goods a soft woolly feel. Plain (959).

I fear your correspondent will have a long way to go before he finds a process that will give him all he desires. The peroxide bleach is expensive, but I would recommend its use if he wants his goods to come out right and to be put on the market as first quality. The complaint is made that the brimstone takes away the woolly feel. If this is the case the goods must have a larger percentage of cotton than wool, as sulphur will make the cotton feel harsh and hard, whereas if there is a larger percentage of wool than cotton, the sulphur will leave the goods in a soft woolly condition. I would advise, therefore, to keep on with the brimstone bleach and finish the goods off after bleaching. They can be finished in several ways. After the goods are bleached and washed give them a handling in an oil or soap solution, using 10 to 15 per cent. of oil or 5 to 10 per cent. soap, with soft water. Have the bath at a temperature of 80° to 90°. This bath can be given in a mangle where the goods are in the open width, leaving them there for at least two hours so that the oil will thoroughly penetrate the fabric before drying. This method of producing the soft feel required could also be helped by having the goods come off the driers cold; this is one important point in obtaining the best results. Do not have them come off wet or too hot. I have visited

some mills where one could not hold his hand in a pile of cloth because of the heat.

Another thing that would help is to have two brushes, with short, hard bristles, fixed up behind the driers, one operating on the top side of the cloth and one on the bottom, bars being set in a position to enable the brushes to have just enough pressure on the goods to act as a beater, but not enough to fray the goods.

It is essential to use a good quality of soluble oil and a good quality of soap, both to be neutral. The quantity of oil and soap can be varied to suit the different qualities of goods and the different results required. By this method the cotton is nearly restored to the state it would be in after a regular cotton bleach. The wool is not injured in any way. Delco.

Fast Black on Mixed Goods.

Editor Textile World Record:

Kindly let us know if you have any dye recipe for mixed wool, cotton and shoddy, all to be dyed a fast black that will stand fulling, bleaching and cross dyeing. Linton (979).

I have looked into the proposition somewhat extensively for the purpose of ascertaining whether or not a fast black, or combination of blacks, might yield the desired result.

It is quite possible to dye a mixture of cotton, with pure wool and extracted wool (shoddy) almost any shade of black, but to have such a black resist the successive action of fulling, bleaching and cross-dyeing, is somewhat out of reason and no known single black dye will do it.

On the other hand, it is quite possible to dye the cotton a given shade of black with one dyestuff, and the mixed wool and shoddy an almost identical shade with another dyestuff, and then mixing the cotton and wool-shoddy together, the resulting fibers to be capable of resisting, say, fulling, or even cross-dyeing, but when it comes to bleaching, the kind of bleach bath would have to be known.

Beyond any doubt, the best blacks for cotton today are the sulphur blacks and not excepting the standard aniline oil or salt black, but the former do not stand bleaching in a chloride of lime bath. For brilliancy, the diazotized blacks on cotton are greatly esteemed, but they do not quite fully resist chlorine bleach, although when properly dyed will stand both cross-dyeing and fulling.

For wool (and shoddy) the best black is, of course, logwood, but even this has its weak points, especially when considered from its chlorine resisting properties. The so-called Alizarine Blacks (not the ordinary acid blacks misnamed "alizarine" blacks) dyed upon a chrome mordant, or those which are fixed upon the fiber by means of "after chroming" are excellent.

To attempt to enumerate the specific dyes that your correspondent might employ would be to give the list of each advertiser in the Textile World Record, and would serve no purpose, other than to confuse. If the desire is to dye the mixture of stock as suggested, a black that will resist the combined influence of fulling, bleaching and cross-dyeing, it is my opinion that the results will be of little value, if one dye is expected to do it, but it is within the bounds of possibility to secure fair results if each fiber (cotton, wool and shoddy) are dyed the proper shade with the dye best suited for that particular fiber, and then afterwards mixing.

If your correspondent will send a sample of the shoddy he intends to employ, a practical suggestion could be worked out, and which I would take pleasure in doing.

Beta-Naphthol.

"Linton" has not made his question very clear. Why does he want to dye his wool twice, which he would do providing it was dyed with the cotton in the first instance and afterwards cross dyed? Cross dyeing as understood by the dyeing trade is where the cotton is first dyed, then woven into the fabric with uncolored wool and then dyed in an acid bath.

Many dyers like union blacks which will dye cotton and wool in one bath. Nearly every dye firm sells a black of this sort which will dye cotton and wool in a neutral bath at a boil, but whether this would meet "Linton's" needs could only be told after a

test. Some of the diazotized and developed blacks will dye cotton and wool in the one dyeing fairly fast. The cotton dyed in this manner will stand cross dyeing and a severe milling and only slightly stain white. It also stands "sulphur stoving," which I infer is what the inquirer means by bleaching.

The proper way to make the best mixtures which are to be cross dyed is to dye the cotton with a good diazotized or sulphur black, then mix with uncolored wool and dye. Most cross dyes are cotton warps or effect threads, but there are some cross dye blacks that are made into blends and are used in the worsted cloaking trade as a back warp and filling.

To dye cotton and wool mixtures the best results are obtained by dyeing the cotton and wool separately; the cotton with sulphur black and the wool with acid or alizarine black. The wool could be colored with logwood on a chrome bottom and fastened on top with a little chrome. The cotton could not be treated in this manner.

Braumwolle.

A SIZING SOLUTION.

A process of sizing either woolen or worsted yarn with a mixture of potato starch and chloride of lime has recently been patented in Germany.

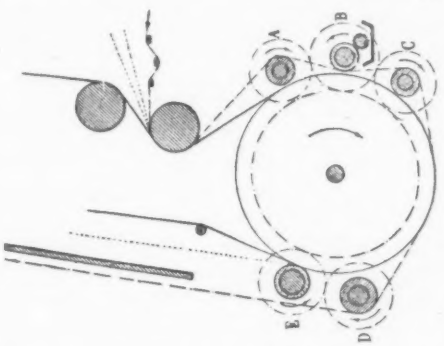
A relatively small quantity of a weak solution of chloride of lime, not over 10° Be., is added at the boiling temperature to the solution of potato starch. This mixture is stirred until it becomes thin and clear. The following is the recipe: To obtain a medium size, 50 pounds of potato starch is mixed in 100 pounds (12 gallons) of water, care being taken to break up all lumps. The mixture is then heated until it becomes thick. From 1 to 3 pounds of a 10° Be. solution of chloride of lime is mixed with 20 to 50 pounds (2 4/10 to 6 gallons) of cold water. The quantities vary according as wool or cotton is to be sized. The chloride of lime solution is then added to the starch mixture and boiled for 7 to 10 minutes until the odor of the chloride of lime has disappeared. The thick mixture soon becomes thin and transparent and can be used for sizing at a temperature of 120° to 140° F. It is claimed that this sizing mixture, on account of being neutral, has no injurious effects on either the fiber or the color.

LUSTER EFFECTS ON FABRICS.

(From Zeitschrift fuer Faerber-Industrie.)

An apparatus, which can be attached to the ordinary cloth printing machine, and designed to produce shot and luster effects, has recently been patented in France.

Five rollers, A, B, C, D, E, are placed in an ordinary printing machine. The engraved copper roller, B, is driven direct, and itself drives A and C, which revolve in the opposite way to B. D is the press cylinder of the machine and is driven by the roller, F, which is driven direct.



The rollers, A, C, and D, are wrapped with an iron band wound spirally on the cylinder and perforated with fine holes. These bands are so applied that the burr of the holes come into contact with the fabric, imparting to the cylinder a very rough surface, to which the goods readily cling. As the rollers, A and C, are of equal diameter and run at the same speed, and as the fabric follows their motion accurately, the tension of the goods remains constant as they pass over the printing roller, and the color is applied with absolute uniformity.

On leaving the roller, C, the goods are drawn out of the machine by the rough roller, D. The copper printing roller may be engraved or not, according to circumstances. In special cases, two engraved

printing rollers may be used instead of one, when an additional guiding roller must be introduced. This machine has turned out very well in practice and gives results which friction has never yet been able to attain. By properly adjusting the proportions between the diameters and speeds of the various rollers the printing can be done uniformly and without any undue strain upon the material. Emile Zundel has already printed several thousand pieces in very varied styles by this process.

The fabrics best suited to this kind of manufacture are satins, velvets, plushes, etc., as well as the various kinds of raised and felted goods. Shot effects are apt to be fugitive on raised goods on account of the ease with which the lay of the nap can be changed. This may be avoided almost entirely, however, by shearing the nap as close as possible and taking care that it is thick.

A very fast style can be got on cotton by color discharges with sulphur dyes. Very fine effects can also be produced by a superficial white discharge. By using printing rollers differently engraved, pattern shot effects can be produced, and by using two or more printing rollers, part-colored effects can be obtained In all these cases it is also possible to overprint these articles, so that the possibilities of the process are greatly multiplied.

Color Cards.

Katigen Intensifier B; Farbenfabriken of Elberfeld Co., New York.

Eight samples of woolen yarn showing results obtained by dyeing with 10 per cent. Katigen Intensifier B. Full working directions are given.

Benzo Green C, Benzo Fast Blue 5 R; Farbenfabriken of Elberfeld Co., New York.

A folder containing samples of cotton yarn, half-silk and half-woolen goods dyed with different percentages of Benzo Green C and Benzo Blue 5 R.

Acid Cyanine; Berlin Aniline Works, New York.

Sample card showing six samples of woolen goods dyed with 4 per cent. Acid Cyanine B F, B, B D, G F, G, G D.

Diazo Brilliant Scarlet 5 B L; Farbenfabriken of Elberfeld Co., New York.

Sample of woolen yarn showing shade obtained by the use of Diazo Brilliant Scarlet 5 B L.

Immedial Colors; Cassella Color Co., New York.

An elaborate folder of 410 samples showing shades obtained on cotton yarn by the use of Immedial colors.

DYE RECIPES.

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 49.

Blue on Worsted Yarn.

Acid Cyanine B D on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Acid Cyanine B D.
(Berlin Aniline Works, 213 Water St., New York.)
4 lbs. Sulphuric Acid.
20 lbs. Glauber's Salt.

Enter at 150° F., bring slowly to a boil and dye at a boil for one hour.

Acid Cyanine B D possesses good leveling and penetrating power. Its fastness to alkalies is excellent and its fastness to light, weather, acids, carbonizing and washing is good.

Recipe No. 50.

Claret Red on Cotton and Wool Union Cloth.

Union Claret B B on 100 lbs. cotton and wool union cloth. Prepare the dye bath with

4 lbs. Union Claret B B.
(C. Bischoff & Co., 451 Washington St., New York.)
25 lbs. Common Salt.

Enter at 140° F., bring to a boil and dye at a boil for 3/4 of an hour and work in the gradually cooling bath for 1/2 hour.

Union Claret B B will be found an excellent color for the dyeing of cotton and wool union cloth.

Recipe No. 51.

Brown on Cotton Yarn.

Thiogene Bronze G on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Thiogene Bronze G.
(H. A. Metz & Co., 122 Hudson St., New York.)
10 lbs. Sodium Sulphide.
4 lbs. Soda Ash.
15 lbs. Common Salt.

The dyestuff is dissolved as usual in the sodium sulphide and the bath brought to a boil. The material is dyed at a temperature just below the boil for one hour.

Thiogene Bronze G possesses the characteristic fastness of the sulphur colors.

Recipe No. 52.

Scarlet on Cotton Yarn.

Diamine Fast Scarlet 8 B N on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Diamine Fast Scarlet 8 B N.
(Cassella Color Co., 182 Front St., New York.)
1 lb. Soda Ash.
30 lbs. Glauber's Salt.

Dye at a boil for one hour.

Diamine Fast Scarlet 8 B N possesses very good fastness to mineral acids and washing and approximately two weeks of sunlight.

Recipe No. 53.

Grey on Worsted Yarn.

Acid Alizarine Grey B on 100 lbs. worsted yarn. Prepare the dye bath with

2 ozs. Acid Alizarine Grey B.
(Kalle & Co., 530 Canal St., New York.)
2½ lbs. Acetic Acid.
3 lbs. Glauber's Salt.

Enter at 160° F., bring to a boil and dye at a boil for 40 minutes.

Then add

4 ozs. Potassium Bichromate

to the dye bath and continue the boiling for 1/2 hour longer.

Acid Alizarine Grey B, when aftertreated in this manner, gives a desirable shade of grey which is very fast to light.

Recipe No. 54.

Red on Cotton Yarn.

Tetrazo Corinth G on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Tetrazo Corinth G.
(American Dyewood Co., 154 William St., New York.)
25 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Tetrazo Corinth G gives Bordeaux shades of great brilliancy and heavy body, which are moderately fast to light and washing.

It is of interest in union dyeing, as the cotton is colored rather darker than the wool.

Recipe No. 55.

Yellow on Cotton Yarn.

Chloramine Yellow R C on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Chloramine Yellow R C.
(Farbenfabriken of Elberfeld Co., 66 Lafayette St., New York.)
20 lbs. Common Salt.
1 lb. Soda Ash.

Enter at 180° F. and dye at a boil for one hour.

Chloramine Yellow R C will be found to give a very brilliant golden yellow color possessing very good fastness to light and chlorine and also good fastness to acids and alkalies.

Recipe No. 56.

Blue on Worsted Yarn.

Acid Cyanine B F on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Acid Cyanine B F.
(Berlin Aniline Works, 213 Water St., New York.)
4 lbs. Sulphuric Acid.
20 lbs. Glauber's Salt (Crystals).

Enter at 150° F., bring slowly to a boil and dye at a boil for one hour.

Acid Cyanine B F possesses good leveling and penetrating power. Its fastness to alkalies is excellent and its fastness to light, weather, acids, carbonizing and washing is good.

Recipe No. 57.

Scarlet on Cotton Yarn.

Diamine Fast Scarlet G G on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Diamine Fast Scarlet G G.
(Cassella Color Co., 182 Front St., New York.)
1 lb. Soda Ash.
30 lbs. Glauber's salt.

Dye at a boil for one hour.

Diamine Fast Scarlet G G possesses very good fastness to mineral acids and washing and approximately two weeks of sunlight.

Recipe No. 58.

Light Blue on Worsted Yarn.

Alizarine Astrole G on 100 lbs. worsted yarn. Prepare the dye bath with

4 ozs. Alizarine Astrole G.
(Farbenfabriken of Elberfeld Co., 66 Lafayette St., New York.)

3 lbs. Sulphuric Acid.
15 lbs. Glauber's Salt.

Enter at 160° F. and dye at a boil for one hour.

Alizarine Astrole G gives a very desirable light greenish blue, particularly in low percentages.

Its fastness to light and stoving is very good and its fastness to alkalies and acids is also good.

Recipe No. 59.

Red on Cotton Yarn.

Paranol Fast Red on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Paranol Fast Red.
(E. M. Thayer & Co., 411 Atlantic Ave., Boston.
25 lbs. Common Salt.

Dye at a boil for one hour.

Paranol Fast Red is fast to light, milling, acids and alkali and does not stain wool. It is very valuable as a self color.

Recipe No. 60.

Lavender on Worsted Yarn.

Acid Alizarine Grey B on 100 lbs. worsted yarn. Prepare the dye bath with

4 ozs. Acid Alizarine Grey B.
(Kalle & Co., 530 Canal St., New York.)
3 lbs. Acetic Acid.
3 lbs. Glauber's Salt.

Enter at 160° F., bring to a boil and dye at a boil for 40 minutes.

Acid Alizarine Grey B when dyed directly gives an excellent shade of lavender which when after-treated with potassium bichromate becomes a very fast grey. See next sample.

Recipe No. 61.

Blue on Worsted Yarn.

Acid Cyanine G F on 100 lbs. worsted yarn. Prepare the dye bath with

4 lbs. Acid Cyanine G F.
(Berlin Aniline Works, 213 Water St., New York.)
4 lbs. Sulphuric Acid.
20 lbs. Glauber's Salt (Crystals).

Enter at 150° F., bring slowly to a boil and dye at a boil for one hour.

Acid Cyanine G F possesses good leveling and penetrating power. Its fastness to alkalies is excellent and its fastness to light, weather, acids, carbonizing and washing is good.

Recipe No. 62.

Grey on Worsted Yarn.

Acid Alizarine Grey B on 100 lbs. worsted yarn. Prepare the dye bath with

4 ozs. Acid Alizarine Grey B.
(Kalle & Co., 530 Canal St., New York.)
3 lbs. Acetic Acid.
3 lbs. Glauber's Salt.

Enter at 160° F., bring to a boil and dye at a boil for 40 minutes.

Then add

6 ozs. Potassium Bichromate.

to the dye bath and continue boiling for 1/2 hour longer.

Acid Alizarine Grey B when after-treated in this manner gives a desirable shade of grey which is very fast to light.

Recipe No. 63.

Grey on Cotton Yarn.

Diamine Fast Grey B N on 100 lbs. cotton yarn. Prepare the dye bath with

1½ lbs. Diamine Fast Grey B N.
(Cassella Color Co., 182 Front St., New York.)
20 lbs. Common Salt.

Enter at 180° F. and dye at a boil for one hour.

Diamine Fast Grey B N will be found of value in the production of compound shades and as a self color. It possesses the characteristic properties of the direct cotton colors.

Recipe No. 64.

Brown on Cotton Yarn.

Oxamine Dark Brown R on 100 lbs. cotton yarn. Prepare the dye bath with

5 lbs. Oxamine Dark Brown R.
(Badische Co., 128 Duane St., New York.)
20 lbs. Glauber's Salt.

Enter at 180° F. and dye at a boil for one hour.

Oxamine Dark Brown R possesses good level dyeing qualities, with good fastness to light and alkalies.

CORRECTION.

Recipe No. 45 for Black on Worsted Yarn in our March, 1908, issue contained an error. The recipe should have read Napthelene Black 4 B instead of Napthogene Black 4 B. This is a product of Read Holliday & Sons, Ltd., 7 Platt St., New York.

The total value of the cotton manufactures imported into the United States in the fiscal year ending June 30, 1907, amounted to $73,704,636; in the same period the exports of cotton manufactures amounted to $32,305,412.

Mill News.

Those interested in receiving early and more complete investigated information of projected new mills, enlargements, improvements, fires facts and gossip of the trade are referred to the Textile Advance News, issued weekly by the publishers of the Textile World Record, at $15.00 per year.

COTTON.

New Mills.

*Alabama, Sylacauga. The Sylacauga Mills, reported incorporated with capital stock of $85,000 in October, has not made arrangements as yet for the erection of a plant. J. W. Brown is pres. of this company and O. F. Luttnell, treas. At the time of the organization of the company, it was stated that a 5,000 spindle plant for the manufacture of 20s to 30s cotton hosiery yarns would be equipped.

Canada, Ontario, Hamilton. The Bell Thread Co. of Montreal will occupy the premises formerly used by the Ontario Canning Co. Thread for manufacturing purposes will be made.

*Georgia, Ball Ground. Rapid progress is being made on the plant for the Ball Ground Cotton Mills.

*Georgia, Douglasville. It is reported that the Lois Cotton Mills will reorganize and provide for an extension of the original plans. J. M. Geer of Easly, S. C., is pres. and treas., and M. E. Geer, vice-pres. and gen. mgr.

*Georgia, Jesup. Plans and specifications are being prepared for the proposed mill for the Goose Creek Railway & Power Mfg. Co., previously reported. It has been given out that the mill structure will be 2 stories high, 100 by 300 ft., of stone and concrete blocks, with concrete floors, sanitary plumbing, and all up-to-date conveniences. The character of the textile machinery which will be required has not been given out. W. H. Whaley pres. of the Merchants & Farmers Bank of this place is at the head of the company. Plans have been prepared by D. G. Zeigler, of Columbia, S. C.

*Georgia, Junction City. Further plans of the proposed cotton mill for this place are as follows: It is proposed to organize a $200,000 company to manufacture sheetings and osnaburgs. E. N. Clements, Charlotte, N. C., will probably be president and treasurer. The work of organizing the company is being held up on account of the present depression, but will be carried to a successful conclusion. It is expected that construction work on buildings will commence the latter part of this year and manufacturing begin about June, 1909.

*New York, Stuyvesant Falls. Manufacturing has started in the Van Alen Cotton Mills and the plant will be known in future as the Collins Bag Co. 28-inch print cloth is being manufactured on 5,200 mule spindles, 10,000 ring spindles and 400 looms. The plant is driven by electricity and gives employment to 275 hands. J. Ross Collins is president, C. H. Langdon, treasurer, and R. H. Plass, superintendent.

*North Carolina, Belmont. The building for the new Majestic Mfg. Co., which is now in process of construction, will be brick, one story high, 125 by 350 feet, and is expected to be completed and equipped with machinery ready for operation during October or November. In addition to the officers previously given C. Enos Bean has been engaged as superintendent. Mr. Bean was formerly connected with the Berkshire Cotton Mfg. Co., Adams, Mass., and the Grinnell Mfg. Corp., New Bedford, Mass. Fine cotton yarns 2/60s to 2/80s in skeins, warps and on cones will be manufactured on 10,944 ring spinning and 5,824 twisting spindles. The plant will be operated and lighted by electricity.

*North Carolina, East Monbo. Construction work is going forward on the cotton mill and power plant being erected for the Turner Mills Co. Complete details have been given previously. The Saco & Pettee Machine Works, have received contract for machinery. W. D. Turner of Statesville, N. C., is pres. of the Turner Mills Co.

North Carolina, Kings Mountain. The Anna Cotton Mills have been incorporated with capital stock of $95.000. J. S. Mauney, pres. of the Bonnie Cotton Mills and also pres. of the Klotho Mills, Inc., is prominently interested. The other incorporators are F. Dilling, J. M. Williams, C. A. Dilling, treas. of the Dilling Cotton Mills, D. M. Baker, and W. A. Mauney, treas. of the Bonnie Cotton Mills and the Klotho Mills, Inc.

*North Carolina, Landis. It is reported that half of the stock for the new $100,000 cotton mill company has already been subscribed. E. G. Mills is at the head of the project.

*Rhode Island, Providence. It is expected that the Rub Dry Towel Co., reported incorporated in January with capital stock of $100,000, will start manufacturing within a few days. This company will manufacture the line of Rub Dry towels, formerly manufactured in the Wachusett Mills, Worcester, Mass. Horace A. Kimball is pres., and H. Earl Kimball, is treas.

*South Carolina, Cheraw. The Cheraw Cotton Mills, reported incorporated in November with capital stock of $150,000, has not arranged for buildings or machinery for the proposed plant. Plans have been made for a plant of 10,000 spindles and 300 looms. James Dillingham, 256 Church St., New York, is president of the company and A. G. Kollock, Darlington, S. C. is treas. and manager.

*South Carolina, Simpsonville. Geo. H. Cutting & Co., Worcester, Mass., have secured the contract for the erection of buildings for the new Simpsonville Cotton Mill. The main building will be 297 by 128 feet. The store house will be 120 by 51 feet, and the engine room 42 by 35 feet.

South Carolina, St. Matthews. It is proposed to organize a $400,000 company to develop power on High Hill Creek and build a 20,000 spindle cotton mill. D. D. Buyck, J. S. Wanamaker and J. A. Banks of this place are promoting the enterprise. It is expected that sufficient power will be developed to supply nearby industries. D. G. Zeigler of Columbia, S. C. will be in charge of the power developments and plans for the cotton mill. It is expected that arrangements will be made shortly for providing a permanent organization.

*Texas, Fort Worth. Arrangements have been completed for the erection of the proposed $500,000 cotton mill by the Farmers Union, near the Texas and Pacific tracks on the west side of Fort Worth.

*Texas, Fort Worth. Fred A. Cumnock, of Celeste, Texas, is interested in the establishment of a cotton mill in this city, but states that it will be 90 days before any definite outlines will be completed.

*Virginia, Bedford City. In addition to the men reported interested in the proposed new cotton mill, James P. Grey is connected with the project and is the principal promoter. It is understood that about $50,000 of the desired $100,000 has been subscribed.

Enlargements and Improvements.

Alabama, Florence. The work of changing the power plant of the Cherry Cotton Mills to electric prive, has been completed. A steam turbine has been installed.

*Alabama, Jacksonville. A new mill erected for the Ide Cotton Mills will probably be in full operation by April 1. The equipment consists of 25,000 spindles and accompanying machinery for the manufacture of yarn. In addition to constructing this building, the company is building an electric plant to drive both the old and new mills. The capital stock of the company was increased from $150,000 to $750,000 in connection with these improvements.

Connecticut, Middletown. A cement and brick addition is being built to the plant of the I. E. Palmer Co. The new building will be 140 feet long and 4 stories high. The lower floor will be used for office purposes and it is probable that the other floors will be used as store room.

*Connecticut, Willimantic. No. 6 Mill of the American Thread Co. is nearly completed. The superintendent for J. W. Bishop Co., in charge of the work, stated that about four weeks more would be required to get the mill in shape for the installation of machinery.

*Connecticut Oakdale. The Massasoit Mfg. Company have commenced to rebuild the burned part of their Oakdale plant. It is expected the whole mill will be in full operation shortly.

*Massachusetts Holyoke. The Lyman Mills have announced a cut of 10 per cent. in the wages of all employees to go into effect March 30. As previously reported, a new mill, 5 stories high and 108 by 290 feet will be built during the summer at a cost of about $140,000.

Massachusetts, Lawrence. It is reported that the Pacific Mills have contracted for 500 new looms.

*Massachusetts, Lowell. The addition to the Merrimack Mfg. Co., reported last week, is to be used for a waste house. No manufacturing machinery will be installed.

*Massachusetts, New Bedford. Work has begun on the new weave-shed for the Potomska Mills, which was reported last Fall would be built. The new structure will be 299 ft. long, 344 ft. wide, with capacity of 2,600 looms. It will be of sawtooth roof construction and equipped with all the latest appliances. Looms will be transferred from the older buildings on the completion of the new structure and it is understood that the space vacated in this way will be filled up with spinning machinery. The Benj. F. Smith Co., of Pawtucket, R. I., has the contract for construction work. It is hoped to have the building completed by September 1.

Massachusetts, Thorndike. The local mill of the Thorndike Company has started up in full, the repairs on No. 2 mill being completed. Tickings, stripes, awnings, etc. are manufactured on 862 looms.

*Massachusetts, Winchendon. J. W. Bishop & Company (Worcester) have been awarded contract to build the new mill for N. D. White & Sons. It is expected that construction work will start within two weeks and that the buildings will be ready for looms about September 1. Complete details of the new mill have been given previously.

New Hampshire, Manchester. The Amoskeag Mfg. Co. has given notice of a 10 per cent. reduction in wages, effective on Monday, March 30. A large air compressor is being installed for the purpose of furnishing air, under pressure, for cleaning purposes and for power.

New Jersey, Newark. The Clark Thread Co. is equipping a new power house which will contain a 2000 K. W. turbo-generator to furnish power for a part of the plant, superseding two of the present engines.

*New York, Le Roy. The stockholders of the Le Roy Cotton Mills have voted to increase the capital stock from $450,000 to $750,000. This increase will finance the enlargement of the plant as previously reported.

North Carolina, Cliffside. A new building with space for 25,000 spindles has been completed for the Cliffside Mills. It is not stated when machinery will be installed. At present, 20,000 spindles and 750 looms are operated on ginghams.

*North Carolina, Fayetteville. The change from steam to electric power at the Holt-Morgan Mills has been completed.

*North Carolina, Greensboro. The addition to the carding and spinning department of the Proximity Mfg. Co. will be ready for manufacture early in the Summer. The new building is a three story structure, 428 by 130 ft. The new equipment is 10 sets of picker machinery, 112 cards, and 25,000 spin-

dles. Yarns will be made for present mill which is run on indigo blue denims. Electricity will be transmitted from the White Oak Mills a mile distant, also operated by the Proximity Mfg. Co. The picker machinery will be furnished by the Kitson Machine Shop, Lowell, Mass.; fly frames by the Woonsocket (R. I.) Machine and Press Co.; and spinning machinery by the Whitin Machine, Whitinville, Mass.

Pennsylvania, Philadelphia. The Zenith Mills, of which Ralph Hirsh and Sol. Dryfoos are the proprietors, and which are now located at Mascher and Somerset Sts., have recently leased a large floor in the building at Indiana Ave. and A St., into which they will move their present equipment of 15 looms, and additional machinery for the manufacture of curtains and draperies. They are very busy and expect to be in their new quarters by June 1.

Pennsylvania, Philadelphia. The Standard Mills, of which Jos. Derk & Co., are the proprietors, are now located at 1310 North Lawrence St., where they manufacture novelty summer draperies, curtains and yard goods on 30 looms. They are arranging for the removal of their plant to Indiana Ave. and A Sts. They expect to be in their new quarters by June 1.

Rhode Island, Pawtucket. Construction work is going forward rapidly on the new storehouse for the Royal Weaving Co.

Rhode Island, Providence. The Coventry Co. will attach new stop-motions to 180 of its looms within the next few days.

Rhode Island Woonsocket. It is reported that the Social Mill will install 500 Northrop looms in the new weave shed at an early date.

*Rhode Island, Woonsocket. Machinery is being stalled in the new Lawton Mill, but it will be some time before the mill is ready for operation.

South Carolina, Camden. The Hermitage Cotton Mills have added 20 Whitin looms to their equipment.

*South Carolina. Cateechee. The Norris Cotton Mills Company's order for new equipment comprised 48 Draper looms. They will not be installed at the present time.

South Carolina, Fountain Inn. The Fountain Inn Mfg. Co. contemplates increasing the capital stock from $200,000 to $300,000. This matter will be considered at a meeting of stockholders to be held on March 24. At present 10,000 spindles and 60 broad looms are operated on 20s to 30s yarns and damask fabrics. C. E. Graham is pres. and R. L. Graham is treas. and buyer.

*South Carolina, Rock Hill. The Aragon Cotton Mills will double its equipment and contracts are now being given out for machinery. It was stated in January that new machinery would probably be installed in the additional space provided when the building was first erected.

*Virginia, Danville. The increase in the capital stock of the Dan River Power & Mfg. Co., from $2,500,000 to $3,000,000 is to provide for the completion of the new mill being erected. No further addition will be made.

WOOLEN.

New Mills.

*Massachusetts, Lawrence. Work is being done preparatory to installing machinery in the mill on Marston St. leased by Joshua D. Armitage & Co.

*Massachusetts, Monson. A. D. Ellis, who has been reported as planning the erection of a new mill on the site of the old Ellis Mill, No. 3, which was recently torn down, states that if concessions are not made in the matter of supplying water, he will not build a new mill at this place. It is probable that satisfactory arrangements will be made. The new mill will have equipment of 6 sets of cards and 36 looms for the manufacture of kerseys, broadcloths and billiard cloths.

*Michigan, Kalamazoo. The Kalamazoo Blanket Co., a new mill previously reported, is owned by the Michigan Buggy Co. The plant has been equipped and operations have started, and when running full time, employment will be given to 50 hands. M. H. Lane is pres., and F. B. Lay is treas. and general manager.

*North Carolina, Winston-Sa'em. At the stockholders' meeting of the Chatham Mfg. Co., H. G. Chatham was elected president, R. J. Reynolds and G. T. Roth, vice-presidents, T. L. Lillard, secretary, and R. T. Chatham, treasurer. In reply to a question as to when the new plant would start, it was stated that definite information could not be given.

Pennsylvania, Philadelphia. Alexander Costine & Co., Howard St. below Lehigh Ave., are just starting up 24 broad looms on men's wear and dress goods, the production will be sold direct. They buy 2/16's to 250's worsted yarn.

Pennsylvania, Philadelphia. Joseph D. Swoyer & Co., Incorporated, with a capital of $50,000; Joseph D. Swoyer, pres., Chas. F. Tracey, treas., and Christopher Berry, supt., have recently leased two floors in the building at the S. W. Cor. of Howard and Berks Sts., which they are equipping with 4 sets, 2500 spindles, for the manufacture of woolen and merino yarns for weaving and knitting. The offices of the company are located at 506 Mariner & Merchant Building, 3rd & Chestnut Sts., where they are also handling a line of worsted yarns in conjunction with the yarns which they are spinning in their own plant.

Enlargements and Improvements.

Connecticut, Killingly. The Pine Tree Worsted Company, whose plant at Putnam, Conn., was recently destroyed by fire, has leased the Brigham Woolen Mill and will start manufacturing at once. The equipment consists of 6 sets of cards and 25 looms which will be operated in full on fancy men's wear. The Pine Tree Company had a large number of orders on hand when the fire destroyed their

plant and will endeavor to fill these as fast as possible. It is expected that operations will commence April 1. Both steam and water power will be used, and a dye house operated on raw stock, yarn and piece dyeing. Jere Emery is superintendent and buyer.

*Connecticut, Torrington. Preparations are being made to start construction work on the new mill for the Warrenton Woolen Co. as soon as weather permits as it is planned to have the new mill ready for occupancy by October 1. As previously reported, the new structure will be 300 by 80 ft., 2 stories high and of brick construction.

Delaware, Wilmington. The Delaware Cotton Company are now manufacturing fancy and piece-dyed dress goods and men's wear, having re-equipped the mill with 500 new looms in place of 550 formerly operated by them. The company has a capital of $250,000; A. D. Jones, pres.; S. Baldwin, treas.; J. W. Dorset, sec.; and Benj. O. Race, general manager. They have a large number of orders on hand and report being very busy.

Maine, Bridgton. A set of cards has been added to the Forest Mills Co., making an 8-set mill. Men's wear woolens are manufactured on 36 looms.

*Maine, Limerick. The water power of the Limerick Mills will be further developed in connection with the change to electric power. Plans for the proposed changes are already under way. All departments of the Limerick Mill are running night and day.

*Maine, Lisbon Falls. It is said that the Worumbo Mfg. Company will erect a new worsted mill in the spring. A year ago this report was given out but the plans were not followed owing probably to the ill health of F. Gutmann, agent of the mill. A quantity of building materials are on the site of the proposed mill. At present, the Worumbo Mfg. Company operates 23 sets and 107 broad looms on beavers, chinchillas, kerseys, broad cloths and other woolen lines. It has a capital stock of $500,000.

Massachusetts, Easthampton. The National Felt Co. is laying the foundation for a new store house 50 by 60 ft. and one story high. The plant is running full time and reports good business. W. E. Emery is agent and buyer.

*Massachusetts, Franklin. The laying of the floor in the card room of the American Woolen Co.'s local plant is now in progress. Extensive repairs are being made.

Massachusetts, Globe Village. A new boiler has been received at the Hamilton Woolen Co.

*Massachusetts, Holyoke. The Farr Alpaca Co. has secured land adjacent to their Jackson St. mill from the Holyoke Water Co. It is not known whether the space will be used for building at the present time. Improvements are going forward in the weaving department, as previously reported.

*Massachusetts, Lawrence. Machinery is being installed in the new dye house recently built for the Washington Mills.

*Massachusetts, Monson. The improvements at the Ellis Mill No. 2 are about completed and it is reported that the plant will start up next week.

Massachusetts, Palmer. Alterations and repairs are being made in the plant of Holden & Fuller. 4 sets and 20 looms are operated on dress goods.

Massachusetts, Pittsfield. Six new looms have been ordered for the Taconic Mill to replace the same number of old looms which will be thrown out.

Massachusetts, Pittsfield. A new boiler and other machinery is being installed in the Silver Lake Woolen Mill. The plant is closed during the installation.

Massachusetts, South Barre. The Barre Combing Co. Ltd. is developing its water power, erecting a higher dam. A hydro-electric plant will be built which will transmit electricity for lighting and power to the mill.

Ohio, Cleveland. Plans have been completed for 5,000 additional horse-power at the Cleveland Worsted Mills. A boiler house will be erected, 50 by 60 ft. and will adjoin the present power plant. Contract has been awarded to Hunkin Brothers. It is also reported that the Cleveland Worsted Co. will erect a large weave shed in the Spring. Some departments of the plant have been working overtime during the last few weeks.

Pennsylvania, Philadelphia. Beswick & Clay, proprietors of the Fairmount Spinning Mills, 25th & Callowhill Sts., due to the increased demand for their wool and merino yarns have added 1000 more spindles and are now operating 7 sets and 6,700 spindles. The production is sold direct.

Pennsylvania, Philadelphia. Kerr, Saylor & Co., formerly located at 1822 to 28 Cadwalader St., where their plant was completely destroyed by fire, have removed their plant to the front building pending the rebuilding of the old mill. They have in operation 7 looms on "Kerrek" carpet and rugs and have placed an order for 29 more looms which they expect to have on hand when the old mill is ready for occupancy.

Pennsylvania, Philadelphia. The Philadelphia Carpet Co., manufacturers of high grade carpets have recently increased their equipment to 33 looms and 14 printing machines. Walter Benham is superintendent and buyer. The plant is located at 5th and Columbia Avenue.

Rhode Island, Thornton. Another story is being added to one of the buildings of the Pocasset Worsted Co. The increased space will be used for winding and spooling. The plant is running on a night and day schedule.

*Rhode Island, Thornton. Construction work has started on an addition to the Victoria Mills. The increased space will be used for a wool sorting department.

*Rhode Island, Wickford. The finishing room of the Premier Worsted Mills has been enlarged. The report that the dyeing department had been increased is incorrect.

Mills Starting Up.

*Connecticut, Norwich. The Preston Woolen Co. has started operations in the new building. The old plant was destroyed by fire in August, 1907. Four sets of cards are in operation.

*Massachusetts, Rochdale. The Rochdale Woolen Mills, A. Howarth & Son, proprietors, have started up on full time after a shut down of five weeks. In the carding and spinning departments operatives are working overtime to prepare yarn for the weave room on account of rush orders which have been received.

Massachusetts, West Chelmsford. The Brookside Worsted Mills have resumed manufacturing.

New Hampshire, Penacook. The Dustin Island Woolen Mills have resumed working on the full schedule. Six sets and 33 broad looms are operated on dress goods.

New York, Waterloo. The Waterloo Woolen Mfg. Co. has started up after being closed since last October. The plant will be operated in full as fast as operatives can be secured. 21 sets and 124 broad looms are run on carriage cloths, broadcloths, shawls and uniform cloths. Albert M. Patterson is pres. and buyer.

Pennsylvania, Philadelphia. John Dobson's Falls of Schuylkill Mill, which has been shut down since the fall of last year, has been started up again, giving employment to 800 operatives.

Wisconsin, Waupaca. The Waupaca Felting Mills are running full time after being closed for the past two months. During the shut-down, needed repairs were made.

Mills Shutting Down.

*California, Marysville. The Marysville Woolen Mills will shut down again for four or five weeks. The plant was shut down in February and has only recently resumed manufacturing.

Massachusetts, Boston. The Roxbury Carpet Co. has shut down for a few weeks, owing to dull business. 140 looms are operated on tapestry and velvet carpets.

Massachusetts, Lowell. The Massachusetts Mohair Plush Co. has shut down its plant indefinitely. About 300 hands are employed.

Massachusetts, Webster. The local plant of the Intervale Mills Corp. has shut down indefinitely. All business will be transferred for the present to the main plant at Quinebaug, Conn. Skirtings and suitings were manufactured on 6 sets and 96 looms.

Pennsylvania, Philadelphia. The Keystone Carpet Mills, 3d and Huntingdon Sts., owned by Thos. Caves & Sons, has shut down owing to the death of Wm. J. Caves. The branch mill at Jasper & York Sts. has also shut down. 165 looms were operated on ingrain carpets, art squares and rugs. It is said that buildings and equipment will be sold.

SILK.

New Mills.

*Delaware, Wilmington. The Golden Rule Silk Mills Company, previously reported incorporated with a capital stock of $100,000, will manufacture taffetas and baratheas on 42 looms. Chas. Taylor is president and buyer of the company and Herman J. Feldhege, treasurer and agent. The plant will be operated by steam power. This company is looking for second hand silk looms of about 45-inch reed space.

New Jersey, Paterson. Ground has been broken for the erection of a 2-story silk mill at Lower Preakness and when completed will be occupied by the Lower Preakness Silk Co. which has capitalization of $30,000. Jacob Van Dryle is pres., Edward Perslo is vice-pres., and Wm. J. Doremus is sec'y and treas. Broad silks will be manufactured.

Enlargements and Improvements.

Massachusetts, Holyoke. It is reported that the William Skinner Mfg. Co. has nearly completed plans for an electric power plant.

*New Jersey, Paterson. The Chas. E. Muller Mfg. Co., organized in January to take over the ribbon weaving business conducted by Chas. E. Muller on Railway Ave. and Thomas St., has capital stock of $35,000. 29 looms are operated on ribbons, the production being sold direct. Chas. E. Muller is president and treasurer.

*New York, Auburn. The Auburn Silk Mills, formerly the Kidney & Brigden Company, will install 30 new looms instead of 80 new looms as previously reported. Richard S. Kidney is general manager and buyer.

MISCELLANEOUS.

*Alabama, Oxford. The Planters' Mfg. Co. is receiving the machinery of the Rhode Island Cordage Co., of Shannock, R. I., which is being dismantled. The new addition, previously reported, will be 160 feet long, 3 stories high, of brick construction.

*Massachusetts, North Brookfield. The Oxford Linen Mills state that they have 1500 spindles and 50 looms in the plant at North Brookfield, making linen towels and crash and other linen fabrics. Frank E. Winchell is pres., James Shea is treas. and W. Marshall Taylor is supt. They report that they will enlarge and increase the plant at once. The capital stock of the Oxford Linen Mills is $2,000,000 and they operate under the Mudge patent for obtaining the fibre from raw flax.

Massachusetts, North Dighton. It is stated now that the Chadwick Print Works will start up during April. Most of the machinery has arrived and has been set in place by the master mechanic.

*Massachusetts, South Acton. A charter has been granted the Moore & Burgess Webbing Co. with capital stock of $10,000. John W. Burgess

will be president and R. Byron Moore treasurer. Full particulars of the plant being started were given in last week's issue.

Michigan, Jackson. The twine plant at the Michigan State Prison started the manufacture of binding twine on March 21. A 3-story building, 60 by 225 feet, has been completed and machinery installed and it is expected that 12,000 pounds of twine will be manufactured daily. A. U. Armstrong, warden of the prison, is buyer and J. B. Brewer is supt. Machinery is driven by electricity.

New Jersey, Passaic. The Passaic Buckram Mfg. Co. has been granted a charter with authorized capital stock of $25,000. Frank S. Slaff, Oswald E. Schneider and Max Donath, all of Passaic, are the incorporators. The office of the company is located at 237 Hope Ave. The object of the company is to manufacture fabrics, particularly buckrams.

*New Mexico, Albuquerque. The addition to the Albuquerque Wool Scouring Mills consists of a building to hold an additional wool washing machine, which will be installed as soon as the structure is completed. James Wilkinson is president and general manager of this company. V. P. Edie is treasurer.

*New York, Binghamton. A year ago it was reported that W. M. Sharp had purchased the buildings and the machinery of the Binghamton Linen Mills. The plant has been put into condition for manufacturing and is about ready to commence the manufacture of towels and crashes. The equipment comprises 43 looms and 43 ring spindles. The firm name is W. M. Sharp Co. J. W. Shea is superintendent and buyer.

Pennsylvania, Philadelphia. The new factory recently erected for S. Rosenau & Co., at Noble and Darien Sts., which is probably one of the largest in this vicinity, is now ready for occupancy. While at present operating 65 looms, 125 knitting machines and 3,000 braiders on dress, millinery trimmings and braids, they have ordered, and expect to have in operation by July 1, 25 new looms and more than 1,000 new braiders, which will be installed in the new building. This concern has also under consideration the erection of a new power house which will be fitted up with new boilers, engines and a complete plant for lighting their large mill.

Pennsylvania, Philadelphia. Messrs. Chas. H. Feldstein & Co., now located at 4264 Paul St., Frankford, where they are manufacturing hair cloth on 30 looms, have purchased the large mills formerly owned by the Star & Crescent Mills Co., for the sum of $75,000. The buildings, which are located at Hancock and Lehigh Ave., occupy a whole block, 92 by 500 feet, and are taxed for $52,000. It is said that the company will remove their plant from Frankford to this new property and place the Frankford mill on the market for sale.

Pennsylvania, Philadelphia. F. W. Maurer & Sons Co., manufacturers of window shade trimmings at 528 Cherry St., with a branch factory at Bristol St., above Germantown Ave., in which they manufacture tapes and narrow fabrics on 45 looms, have recently contracted for the erection of a 3-story addition to the factory on the east side of Wayne Ave., north of Bristol St., which will be 99.8 by 108 feet, and cost in the neighborhood of $20,000.

Pennsylvania, Philadelphia. The Christ Bros. Manufacturing Co., (not incorporated) which is owned and operated by Messrs. John H. and Amos K. Christ, having made considerable improvements to their plant are now operating 500 braiders on elastic braids, cords, and webbings. Among the other improvements the company has installed its own bleaching plant. They sell direct and are very busy.

Pennsylvania, Philadelphia. Messrs. Joseph Taylor & Son, who have been operating the Star Carpet Mills on all wool ingrains with 34 looms at Howard St. and Montgomery Ave., have dispensed with the weaving department and are now operating the plant under the name of the Star Carpet Mills and Dye Works, dyeing carpet yarns for the trade.

Pennsylvania, Philadelphia. The Miller Waste Manufacturing Co., now at 2620-22 Martha St., where they are manufacturing cotton and woolen waste with a capital of $10,000, report that they are seeking larger quarters into which they will move about the 1st of June next. It is also their intention to put in willows, pickers, presses, etc., for which they are now negotiating. F. H. Miller is president and manager and M. E. Miller is treasurer.

Pennsylvania, Philadelphia. The Valkone Dye and Finishing Works, Mascher and Turner Sts., finishers of woolen, worsted and mixed fabrics, having secured more floor space, are about to increase their plant by additional machines which are now being delivered and set up. They are very busy.

*Rhode Island, Apponaug. Two new boilers installed in the Apponaug Company started up this week for the first time, the plant closing down one day in order to make the connection.

Rhode Island, Pawtucket. The Lowry Fabric Mfg. Co. will lease quarters instead of building, as previously reported. 10 looms are being built and will be in operation in July. Rugs, carpets, mattings, etc., will be the product. 2,500 pounds of 4/4 cotton yarn will be consumed daily when the plant is in full operation. Complete details of officers have been previously given.

*Rhode Island, Providence. Machinery is being installed in the building on Willard Ave. which it was reported previously would be occupied by the Rhea Yarn Co. Manufacturing, however, will not start until May or June. W. S. Hodgson, 29 N. Main St. is agant of this company. Yarns will be manufactured from ramie.

*Tennessee, Memphis. W. H. Chadwick and W. H. Carter, reported to be organizing a new calico printing plant, are going forward with plans. It is reported that they also contemplate the promotion of a new cotton mill.

*Texas, Galveston. The Galveston Waste Mills, incorporated in July with capital stock of $5,000, expect to be running in full very soon. Samples of the product are being prepared and will be sent out to consumers as an invitation for business. This company was incorporated by J. H. Langbehn, Ben Dolson and J. E. Kauffmann.

FAILURES AND SUSPENSIONS.

Maryland, Ilchester. J. Pembroke Thom, Edgar G. Miller, Jr., and Wm. H. Brune have been appointed receivers for the Thistle Mills Co. It is stated that the company has been run at a loss for several years and has unsecured debts to the amount of about $75,000. It is probable that the plant will be kept in operation by the receivers and sold as a going concern.

New Jersey, Passaic. Harry Myers has been appointed receiver for the Alexander Company, a silk weaving concern of this city. The factory has shut down. The assets are given as $15,000 and the liabilities $30,000.

New Jersey, Paterson. The failure of Cramer & King Co., silk printers, dyers and finishers, is reported with liabilities of $121,000 and assets about $25,000. Up to a few months ago this company was located in the Cook Mill on Market st. They purchased the Morlot Mills, East 33d St., about six months ago and removed the plant to the new quarters. The capital stock of the Cramer & King Co. is $125,000.

New Jersey, Paterson. A petition in bankruptcy has been filed against A. & M. Levy, manufacturers of silk ribbons. Peter Alexander was appointed receiver. The liabilities are said to be $1,100,000; the normal assets $1,500,000 and actual assets $750,000 to $800,000. An extension has been asked and it is reported that the firm will pay dollar for dollar. The operation of the mills will not be interrupted. A. & M. Levy are at the present time removing their plants to the new Levy Mill on Tatowa Ave.

New Jersey, Paterson. The Clowes & Southern Silk Co. has been forced into involuntary bankruptcy, Judge Lanning appointing David Cohn, Esq., receiver. The liabilities are $125,000 and assets $75,000. The company had a capital of $50,000. William Clowes is pres. and supt. and J. W. Sothern, treas.

*North Carolina, Greensboro. Andrew E. Moore and Frank H. Fries have been appointed receivers for the Pomona Mfg. Co. Last week the application for receiver was reported.

North Carolina, Jonesboro. A. W. Graham of Oxford, N. C., has been appointed receiver for the Eugenia Mfg. Company and the Clark Mfg. Company. Mr. Graham is an uncle of David Clark who was president of both mills.

North Carolina, Rutherfordton. Mat McBrayer, of this place and A. C. Miller of Shelby, have been named as temporary receivers for the Levi Cotton Mills Co. on application of Mr. Myer Levi, president and treasurer of the company. A further hearing will take place April 6. The particulars of the receivership were not obtainable. The Levi Cotton Mills Co. manufactured 18s to 30s cotton yarns in skeins, chain warps, ball warps and beams on 6,480 ring spindles and 3,200 twisting spindles.

Pennsylvania, Philadelphia. Creditors have filed a petition against Thomas Clegg, trading as Edward Clegg's Sons, to have him adjudged an involuntary bankrupt. The creditors, with the amounts claimed, are: The American Dyewood Company, $726.07; Van Lear & Co., $164.40; and Charles H. Simister & Son, $186. The plant in which they manufactured shoddies, is located at Howard and Berks Sts., and will be sold out at public auction, by order of Chas. H. Simister, the receiver, on Friday, April 3.

Rhode Island, Ashaway. Albert H. Chamberlain, Boston, and Edward P. Jastram, Providence, have been appointed temporary receivers for the Nashua Valley Mills. This action was taken on petition of creditors who claim that the corporation committed an act of bankruptcy by admitting in writing its inability to pay its debts and its willingness to be adjudged bankrupt. William Rodger is president and manager and Charles G. Bancroft is treasurer. Fine worsteds are manufactured on 2 sets and 24 looms.

*Wisconsin, Milwaukee. The Kassmann Mfg. Co., a new concern with capital stock of $50,000, which started the manufacture of worsted goods in the plant formerly occupied by the Milwaukee Worsted Cloth Co., has been declared bankrupt and machinery and material sold. 16 looms were operated on piece dyed worsteds. It is not known whether the plant will remain idle, or not.

FIRES.

Georgia, Atlanta. Fire damaged the plant of the Atlanta Hosiery Mills entailing a loss estimated at $20,000 to $25,000, covered by insurance. It is reported that the mill will be repaired as soon as possible. S. A. Magill is president and treasurer.

Massachusetts, Lowell. A building at the corner of Howard and Tanner Sts., used as a storage house by the Walter Coburn Company, cotton waste manufacturers, was destroyed by fire with a loss of $6,000, covered by insurance.

North Carolina, Cooleemee. A severe fire practically destroyed the slasher, looper and drying departments of the local plant of the Erwin Cotton Mills Co. causing loss of about $50,000, covered by insurance. Arrangements will be made at once for the erection of a building to replace the burned structure. The company has been operating 47,000 ring spindles and 1296 looms on mottled flannels, sheetings, drills, etc.

North Carolina, Lexington. The Yadkin Knitting Mills has suffered a loss of $11,000 by fire. The insurance is given at $10,000. The Yadkin Mills have capital stock of $15,000 and operated 41 latch needle knitting machines on women's seamless cotton hosiery.

Pennsylvania, Philadelphia. The Baker Mfg. Co., 41 Ashmead St. suffered a loss of $6,000 by fire. Gloves, jackets and sweaters were manufactured on 60 knitting machines and 2 sewing machines. Wm. Rhodes is pres.; and Thos. F. Rhodes, treas.

Pennsylvania, Philadelphia. A fire which started in the picker room of Thomas Henry, Jr.'s yarn mills at Madison and Jasper Streets, recently damaged the plant to the extent of $7,000.

Pennsylvania, Philadelphia. A fire of unknown origin which started on the first floor of the Caledonia Carpet Mills, Croskey and Buttonwood Sts., owned by Alexander Crow, Jr., who was recently declared an involuntary bankrupt, caused a damage of $10,000.

Pennsylvania, Plymouth. The Wyoming Valley Knitting Mills, Thomas West, proprietor, was seriously damaged by fire. The blaze was confined to the storehouse and very little damage to the machinery resulted. The loss is about $15,000. 350 latch needle knitting machines are operated on seamless cotton half hose.

Pennsylvania, Reading. The Relay Dye Works, 10th and Exeter Sts., has been destroyed by fire. They did a business of dyeing and bleaching hosiery, underwear and cotton yarns.

FACTS AND GOSSIP.

Alabama, Birmingham. It is reported that the Alabama Cotton Manufacturers' Association has decided not to curtail production nor to cut wages.

Canada, Quebec, Beauharnois. It has been reported that the Dominion Woolen Mfg. Company has decided to go into voluntary liquidation. The company has a capital stock of $210,000 and operates 6 sets of cards and 70 broad looms. The liabilities and assets are not given. The Canadian preferential tariff to English goods is the reason.

Connecticut, Danielson. The Danielson Cotton Co. is running part of its plant all night, and the weaving department is being run until ten o'clock at night. 25,000 spindles and 410 looms are operated.

*Connecticut, Manchester. The Spring Silk Co. granted an increase of 1/2c. per yard to weavers. The plant is being run 12 hours a day.

*Connecticut, South Coventry. The equity in the property of the Washburn Silk Co.'s bankrupt estate has been sold by the trustee, Wm. C. Latimer, to Eugene A. Tracy, who holds a $12,000 mortgage on the property. The price paid is not stated. Mr. Tracy operates a wool extract plant at this place.

Connecticut, South Manchester. Cheney Brothers are arranging for an exhibition of their silk products to be given in Cheney Hall the week ending April 4. Silk in all stages of manufacture will be exhibited.

*Connecticut, Stafford Springs. The Riverside Woolen Co. has filed final certificate of dissolution. Manufacturing was discontinued some time ago.

Georgia, Atlanta. The Fulton Bag & Cotton Mills have announced a wage reduction of 25 per cent. in their mills. 1800 hands will be affected.

Georgia, Barnesville. It is reported that Thomas D. Stewart of Atlanta, representing the Inman interests, has arranged for the purchase of the Aldora Mills from R. J. Taylor, one of the receivers of the Exchange Bank. The price agreed upon is not stated. The plant of the Aldora Mills is in excellent condition and has always run at a profit. The capital stock is $125,000, and 10,000 mule spindles are operated on 9s to 18s cotton yarns.

Georgia, Eatonton. The application for a receiver for the Middle Gorgia Cotton Mills has been dismissed. It is expected that the plant will now resume work at an early date. It is reported that new machinery will be installed. D. W. Hunt is president. 6,000 spindles and 100 broad looms were operated on duck.

Georgia, Macon. K. F. Dunlap would like to correspond with manufacturers of machinery for making jute bags. Mr. Dunlap's address is 3d and Poplar Sts.

Indiana New Albany. It is reported that Eastern manufacturers are negotiating for the woolen mill property on Vincennes St. with a view to installing woolen machinery and operating the plant. All the old machinery has been removed.

Maine, Springvale. It is reported that a new industry for the manufacture of lace may locate here if about $14,000 can be raised by local parties. The names of interested parties have not been given out.

*Massachusetts, East Blackstone. The report that Wm. F. Worrall and David S. Sherwood, owners of the Quick River Mill property, would erect a yarn mill, is incorrect. Mr. Worral advises that nothing whatever will be done to the property and that the erection of a yarn mill has never been contemplated.

*Massachusetts, Hinsdale. The Hinsdale Woolen Mills have been incorporated with capital stock of $50,000. James M. Morrison, Boston, is pres.; John J. Hennessey, Boston, treas. and Nathaniel M. Jones, clerk. This plant was reopened in August by Thomas Kelly & Co. of Boston. Eleven sets of cards and 65 looms are operated on wool blankets.

Massachusetts, Indian Orchard. The Hodges Fibre Carpet Co. has returned to a full time schedule and it is not expected that further curtailment will be necessary. Fibre carpets, art square and rugs are manufactured on 250 looms.

Massachusetts, Lawrence. The Arlington Mills have purchased a large tract of land bounded by Arlington and Alder Sts. The purchase price has not been given out.

Massachusetts, Lawrence. The Lawrence Dye Works Co. has put on a night force and is running

24 hours, six days a week. Cotton, woolen and worsted yarn and piece goods, hosiery, etc. are dyed and finished.

Massachusetts, Lawrence. The new office building of the Washington Mills is now being occupied by the executive and clerical force of the mills.

Massachusetts, Lawrence. At a meeting of the stockholders of the Wood Worsted Mills it was voted that the capital stock be increased from $3,500,000 to $5,000,000, as the original capital was insufficient for the purposes of the corporation.

Massachusetts, Millbury. It is again reported that the Bowden Felting Mill Co. will be absorbed by the American Felt Co. and that Herbert L. Bowden will be treasurer of the American Company. The report cannot be verified, however.

*Massachusetts, South Royalston. On Wednesday of this week the George Whitney Co. passed to the control of the American Woolen Co. The plant has been shut down for some months. The equipment consists of 9 sets and 6 pickers, which were operated on woolen yarns.

*Massachusetts, Spencer. The boiler at the Priscilla Woolen Co. cracked directly over the fire box and serious damage was averted by the prompt drawing of the fires and opening of valves by the night watchman. A new boiler will be installed before the plant is operated again. The Priscilla Woolen Co. was organized about three months ago with capital stock of $10,000, which was later increased to $15,000.

Massachusetts, Taunton. A number of weavers employed at the Taunton River Mills have struck because the company refused to advance wages a half-cent a yard. Nearly all the machinery in the mill is in operation.

Massachusetts, Uxbridge. At the C. A. Root & Co.'s mill, two-loom work has been inaugurated during the recent shut-down. A number of the weavers have refused to work on the new system and a strike has been declared.

Massachusetts, Ware. The main shaft in the plant of the Geo. H. Gilbert Mfg. Co. broke, necessitating a shut down of the weaving department. Upon the completion of repairs the mill was operated nights to make up lost time. The Gilbert Co. has a satisfactory number of orders on hand.

Minnesota, St. Paul Park. L. A. Hubachek, Room 314, Post Office Bldg., Minneapolis, will sell on Monday, May 4, the property and equipment of the Black Hawk Mills Company of this place.

New Jersey, Haledon. The Cedar Cliff Silk Co. has resumed work on full time. 450 looms are operated on all kinds of broad silks.

New Jersey, Paterson. The Columbia Silk Co. is running its plant overtime to make deliveries on time.

New York, New York. The Yazoo Mills have been incorporated with capital stock of $10,000 to manufacture cordage and binder twine. Wm. R. Berryman, Nellie M. Berryman and George B. Marshall are the incorporators. Their office is located at 192 West Broadway, New York City.

New York, Niagara Falls. A new company, known as the Ryder Patent Yarn & Mfg. Co. of New York, recently incorporated with capital stock of $325,000, may erect a plant here. Henry Ryder, one of the incorporators, is inventor of a fibrous steel yarn, from which is manufactured fire hose. automobile tires and cordage. The process consists of twisting wire with cotton fiber. It is stated that plans have been prepared for a building 800 by 75 ft. to be erected at a cost of $175,000. Chas. Wessick and H. T. Tighe are associated with Mr. Ryder in the new company.

*Ohio, Dresden. The Muskingum Valley Woolen Mfg. Co.'s plant and machinery have been sold at auction. The failure of this company was caused by the failure of their commission firm, Riegar, Kapner & Altmark in November, 1907.

Ohio, Dresden. It is reported that William Miller, John Shaw and Henry Hare will organize a company to start woolen manufacturing. It is probable that the Muskingum Valley Woolen Mfg. Co.'s plant will be leased. In December, Messrs. Shaw and Hare were reported as organizing the Capitol Knitting Co. of Columbus, Ohio. At the recent sale of the Muskingum Co.'s plant the property was bought by B. F. Penn of Bern for $19,028.

Pennsylvania, Doylestown. On order of William T. Westerman, receiver, the plant of the Doylestown Hosiery Co. was sold at public auction March 26. The branch plant at Bethlehem, Pa., has been taken over by the West End Hosiery Mills, of which M. S. Weaver is proprietor.

Pennsylvania, Philadelphia. The Keystone Dye Works, located at 1708-16 Howard St., owned and operated by John Nolan, in which he dyed carpet yarns with a capacity of 10,000 lbs. per day, has been dismantled and is no longer in existence. The buildings have been remodelled and are now used for other purposes.

Pennsylvania, Philadelphia. F. J. Primrose, 134 Chestnut St., is sending out letters to wool dealers and commission merchants, requesting an expression of opinion on a project to establish a national wool auction. Manufacturers also will be asked to give their views. Western growers are making an effort to start such an auction at Omaha, but Mr. Primrose, who is the originator of the movement and temporary head of the Wool Auction Sales Co. organized to promote the plan, declares that it will be more successful if located in New York, Boston or Philadelphia.

*Pennsylvania, Philadelphia. The Stead & Miller Co., recently incorporated, which succeeded to the business of Stead, Miller & Co., 4th and Cambria Sts., has a capital of $350,000. Wesley Stead is president; Theo. F. Miller, vice president and treasurer, and Theo. M. Hillsley, secretary and general manager. They are manufacturers of draperies and upholstery goods on 190 looms, which they dye and finish, their dyehouse being located on American above Huntingdon St. They sell direct with a New York office at 140 Fifth Ave.

Pennsylvania, Philadelphia. Messrs. W. Greenhalgh & Co. are operating 9 narrow and 1 broad looms at 2218-20 Martha St. on Turkish towels, roller toweling, table covers, bureau scarfs, etc., selling the product direct. They report a good business. W. Greerhalgh is the buyer and superintendent. They buy 14s single and 2/20 warps and skein.

*Pennsylvania, Philadelphia. John Watts' Sons Co., recently incorporated to take over the business of John Watts' Sons, Trenton Ave. and Sergeant Sts., has a capital of $30,000. Joseph Watt is president; Hugh Watt, treasurer and Frederick Kneibler, secretary. They are manufacturers of all grades of ingrain and granite carpets on 30 looms, which they sell direct.

Pennsylvania, Philadelphia. The West End Woolen Mills Co., formerly operated by H. S. Henry, located at 64th and South Sts., which is now owned and operated by a corporation, has for its officers Jos. D. Murphy, president, and Edw. V. Murphy, secretary and treasurer. The plant is operated on flannels and cassimeres with 14 sets and 225 looms, with Samuel Rigby as superintendent. The production is sold through M. H. Meinhardt & Co., N. Y., and direct.

Pennsylvania, Philadelphia. The Tracy Worsted Mills Co. report that their business is now undergoing a process of liquidation. They state that they do not know whether new parties will take hold of the plant and continue its operation or whether it will be shut down and offered for sale. The company has a capital of $300,000; Frank T. Griswold, president; D. Stuart Robinson, treasurer, and George W. Lefferts, superintendent. They manufactured worsted yarns on the English system with 8 combs and 7,720 spindles, selling the production direct.

*Pennsylvania, Philadelphia. The plant of C. Bailey & Son, who recently went into bankruptcy, located at 810-18 Swanson St., will be sold at public auction on Tuesday, April 16. The sale will include not only the entire equipment of the plant, comprising all classes of machinery for the manufacture of rope and cordage, but also the factory buildings, etc.

Pennsylvania, Philadelphia. George F. Kempf & Bro., who are manufacturing cocoa mats, matting and wool bordered mats on 16 looms at 1027 N. 4th St., report that they are very busy. Chas. N. Kempf is the supt. and buyer. They buy D. R. Carpet yarn, 3 ply jute and cocoa yarns which they dye and finish, selling the production direct.

Pennsylvania, Philadelphia. The Stenton Mills Co., whose mill at 1824 Cadwalader St. was completely destroyed by fire several months ago, have not as yet started up their plant again. Investigation failed to reveal whether they will commence operations again or not. The company had a capital of $25,000; Thomas MacNair, pres. and John G. Campbell, sec. and treas., operating 40 looms on narrow fabrics etc., which they sold direct.

*Pennsylvania, Philadelphia. The Baker Mfg. Co. whose plant at 41 Ashmead St. was destroyed by fire a few weeks ago, will resume manufacturing under new management and in new quarters. It is understood that Thomas F. Rhodes will be president of the new company.

Pennsylvania, West Conshohocken. The plant of the Gulf Woolen Mills, recently reported as having failed, was sold at public auction on March 23.

Rhode Island, Central Falls. The Reliable Mfg. Co. has found it necessary to add a number of extra hands to keep up with orders. It is reported that an overtime schedule is being considered.

Rhode Island, Greenville. It is reported that all this season's products of the Greenville Woolen Mills has been sold up. The plant is operated by the Earnscliff Worsted Mills.

Rhode Island, Pawtucket. At a meeting of the stockholders of the Home Bleach & Dye Works held on the 6th of March the following officers were elected: Peter B. McManus, president and treasurer; Edward J. McCaughey, secretary and manager, and John McManus, vice-president. The company is doing a large business in mercerizing both skeins and warps, and can also return yarn to customers on Whitin quiller cop tubes, cones or beams, dyed and bleached.

Rhode Island, Woonsocket. The Ray Cotton Co.'s property on Main St. is for sale. Charles F. Parker is preparing plans of the land, buildings and water privilege.

Rhode Island, Woonsocket. Earl Lawrence, 34 Spring St. is considering the opening of a plant for the manufacture of braid. Mr. Lawrence was interested financially in the Meriden Broad Co., of Meriden, Conn.

Rhode Island, Woonsocket. A night shift has been put to work in the plant of Sayles & Pendergast and the mill will be run 5 nights a week until further notice. 26 broad looms are operated on fancy worsteds. H. F. Sayles is supt.

*South Carolina, Greenville. J. B. Burgard, receiver for the Hugenot Mill, advises that the property will be advertised and bids asked for. We previously reported the shutting down of the plant and the probability of it being offered for sale.

South Carolina, Greenville. At a conference of the South Carolina Cotton Manufacturers' Association it was decided to continue the curtailment of 25 per cent. of the production of cotton goods for the next three months. Two and a quarter million spindles were represented out of a total of three and a quarter millions operated in South Carolina.

Tennessee, Memphis. W. J. Hurlbut, industrial and land agent of the Southern Railway, has been investigating conditions for the establishment of a cotton mill. It is reported that English capitalists are contemplating the erection of a plant.

*Texas, Colorado. The proposed new cotton mill is being promoted jointly by the West Colorado Land Co. and the City. Plans are being made to form a $150,000 company which will build a plant to operate 5,000 spindles and 140 looms on cotton duck. B. M. Garrett, pres, and general manager of the West Colorado Land Co. is interested in information on both buildings and machinery.

Personals.

T. L. Ross, superintendent at the Paterson Mfg. Company, China Grove, N. C., has resigned and accepted a position as superintendent at the new Cannon Mills, Kannapolis, N. C. The position has been filled by E. W. Edwards, who was formerly overseer of weaving.

F. Hamilton, superintendent of the Drayton Mills, Spartansburg, S. C., has severed his connection with that company.

J. T. Collins has accepted a position as overseer of the cloth room for the Fairfield Cotton Mills, Winnsboro, S. C. He comes from Fairmont, S. C.

Chester Williams has accepted a position as overseer of spinning at the Fidelity Mfg. Company, Charlotte, N. C.

W. P. Campbell, superintendent of the Lafayette Cotton Mills, Lafayette, Ga., has severed his connection with that company.

D. C. Davenport, overseer of finishing at the South Bend Woolen Company, South Bend, Ind., has severed his connection with that company. The position has been filled by his son Henry.

Frank Stiner has accepted the position as overseer of finishing at the Peace Dale Mfg. Company, Peace Dale, R. I. He comes from Lawrence, Mass.

B. Frank Smith was elected director and C. J. Bodfish treasurer of the Wood Worsted Mills, Lawrence, Mass., at a meeting of the directors held in Boston March 2.

James Jones, overseer of finishing at the Excelsior Mills, Farnumsville, Mass., severed his connection with that company.

Edward W. Guiterman, superintendent of the Passaic Print Works, Passaic, N. J., will sever his connection with that company about June 1. He has been in their employ about 18 years.

A. F. Griffin, superintendent of C. A. Root & Company, Uxbridge, Mass., has been appointed superintendent of the Excelsior Mills, Farnumsville, Mass., succeeding H. S. Wood.

H. S. Wood, superintendent of the Excelsior Mills, Farnumsville, Mass., has been appointed designer for the C. A. Root & Company's Mill.

Geo. R. Bury has succeeded Geo. R. Race as superintendent of the Ashland Mfg. Company, Dickeyville, Md.

Walter Lee has accepted the position as overseer of dyeing at Charlotte, N. C. He was formerly employed at the Wood Worsted Mills, Lawrence, Mass.

Robert Armstrong, overseer of dyeing at the Carolina Woolen Company, Carolina, R. I., has severed his connection on account of ill health.

A. L. Tainter has accepted the position as overseer of finishing at the Gonic Mfg. Company, Gonic, N. H. He was formerly employed at the Beaver Brook Mills, Collinsville, Mass.

John P. Wood was elected president of the Calico Manufacturers' Association at the annual meeting held in their office, Hale Bldg., Philadelphia.

John S. Walling, superintendent of the Fred L. Sayles Company, Pascoag, R. I., has severed his connection with that company on account of ill health.

John Kinarey has accepted a position as overseer of weaving at the Greenville Woolen Mills, Greenville, R. I. He was formerly employed at the Bay State Worsted Company, No. 2 Mill, Putnam, Conn.

Chas. Davis has accepted a position as designer for the Fred L. Sayles Company, Pascoag, R. I. He was formerly employed at Tillotson Mills, Pittsfield, Mass.

F. H. Treadway has accepted a position as boss carder for the Beaver Dam Woolen Mills, Beaver Dam, Wis.

At a meeting of the directors of the American Woolen Company recently held, Wm. M. Wood was elected president; Frederick Ayer, vice-president; Andrew Pierce, Jr., second vice-president; Perry C. Wiggin, third vice-president; Wm. H. Dwelly, Jr., treasurer; Willard Currier, asst. treasurer; Arthur Pousland, second asst. treasurer; Chas. A. Hardy, third asst. treasurer; Wm. H. Dwelly, Jr., secretary and Frederick J. Sherman, asst. secretary.

Robert Hudson Cunningham for thirty years connected with the silk trade of Paterson, N. J., and New York City, died at his home in Paterson, March 9th, of a complication of diseases. He was 53 years of age.

Julius Brandes, a well known silk manufacturer of Paterson, N. J., has been appointed by Mayor Andrew F. McBride, a member of the Board of Public Works, to take the place of David Grimshaw, who resigned.

P. S. Walsh, overseer of the spinning, warping and spooling departments at the Bernon Mills, Georgiaville, R. I., has severed his connection with that company and accepted a position at the Nonquit Mills, New Bedford, Mass.

R. F. Duncan is now overseer of carding at the Fidelity Mfg. Company, Charlotte, N. C.

J. H. Bagwell has accepted a position as overseer of weaving, slashing, and drawing-in at the Hoskins Mills, Charlotte, N. C. He was formerly employed at the Mecklenburg Mills, Charlotte, N. C.

Geo. Stewart has accepted a position as overseer of carding and spinning at the Lafayette Cotton Mills, Lafayette, Ga., succeeding J. A. Campbell.

H. T. Burns, overseer of carding at the Middle Georgia Cotton Mills, Eatonton, Ga., has resigned and accepted a position as overseer of spinning at the Alabama Cotton Mills, Columbia, Ala.

Lea J. Sossoman has accepted a position as master mechanic and chief engineer at the Premier Cotton Mills, Barton, Ark.

J. M. Short has accepted the position as overseer of spinning at the Cherryville Cotton Mills, Cherryville, N. C. He comes from Caroleen, N. C.

James Donnelly has accepted the position as overseer of finishing at the Newville Knitting Company, Newville, Pa. He was formerly employed for W. F. Keefers, Camillus, N. Y.

James Fagan has accepted the position as overseer of weaving at the C. A. Root & Company's mill, Uxbridge, Mass. He was employed as overseer of weaving at the Hecla Mills, Uxbridge, Mass., before this mill was taken over by the American Woolen Company.

Lot Collins, overseer of spinning for the Darling Woolen Mills, Holliston, Mass., has accepted a position as overseer of spinning at the Racine Woolen Mills, Racine, Wis.

Alfred Stokes, overseer of weaving at the C. A. Root & Company's Mill, Uxbridge, Mass., has severed his connection with that company.

J. P. Prineau, overseer of the spinning department of the Chace Cotton Mills, Burlington, Vt., was presented with a handsome gold ring and cuff buttons, by the employes in his department as a token of the esteem and respect in which he was held by them. He has resigned his position to accept a more responsible one at Montreal Canada.

Henry William, superintendent of the Canoe River Woolen Mills, New England Cotton Yarn Company, has accepted a position at Ipswich, Mass.

Wm. P. Welch has been elected treasurer of the Somerset Woolen Company, Monson, Mass., he was formerly a resident of Monson, Mass.

Edwin F. Greene, treasurer of the Pacific Mills, Lawrence, Mass., has resigned the position as treasurer of the Lawton Mills Corporation, Plainfield, Conn. He is succeeded by his brother, Harold S. Greene.

J. J. Huffstickler, night superintendent at the Maple Mills, Dillon, S. C., has taken charge of carding and spinning at the Springfield Mills, Laurel Hill, N. C.

E. W. Hooper, overseer of spinning at the Young Hartsell Mills, Concord, N. C., has resigned to accept a similar position with the Aragon Mills, Rock Hill, S. C.

C. M. Ellis has accepted the position as yarn inspector at the Gray Mfg. Company, Gastonia, N. C., succeeding Chas. Caldwell.

Geo. T. Jackson has been appointed assistant superintendent and designer for the Meridian Cotton Mills, Meridian, Miss. He formerly held the position as overseer of weaving.

P. A. Holt, overseer of spinning at the Hannak Pickett Mills, Rockingham, has been appointed superintendent of the Liberty Cotton Mills, Clayton, N. C.

John J. Connell, agent of the Tremont & Suffolk Mills, Lowell, Mass., has been named permanent treasurer of the Corr Mills, a position made vacant by the death of Wm. S. Potter of Fall River, Mass.

Edward J. Gintermann has severed his connection with the Passaic, N. J., Print Works. He held the position as superintendent. Edward E. Poor, treasurer of the company, will assume full charge.

Wm. J. Foley has accepted the position as overseer of spinning at the Fitchburg Yarn Company, Fitchburg, Mass. He was formerly employed at the Parker Mill, Warren, R. I.

Thomas Peat has accepted the position as overseer of spinning at the Columbiaville Woolen Mills, Columbiaville, Mich. He formerly held this position and was recently employed at Racine, Wis.

A. H. Landry, overseer of weaving at the Reliance Worsted Company, Norwich, Conn., has severed his connection with that firm and has been succeeded by John Martin, formerly employed at the Merrimack Woolen Mills, Dracut, Mass.

Wm. A. Potter, employed as billing clerk at the Apponaug Company, Apponaug, R. I., has severed his connection with that company.

P. T. Donahue has accepted the position as overseer of finishing at the Excelsior Mills, Farnumsville, Mass. He was formerly employed at the Montrose Woolen Mills, Woonsocket, R. I., where he held the position as overseer of finishing for a number of years.

J. H. Pickford has accepted the position as superintendent of the Fred L. Sayles Company Woolen Mill, Pascoag, R. I. He was formerly engaged at Clinton, Mass.

R. H. Plass, formerly employed at the Maginnis Mills, New Orleans, La., has accepted the position as superintendent of the Van Allen Cotton Mills, Stuyvesant Falls, N. Y.

Chas. H. Richardson, at one time agent of the Appleton Mills, Lowell, Mass., has been appointed county commissioner to serve out the unexpired term of the late commissioner, Bigelow.

James Norton, overseer of dyeing at the Taconic Mills, Pittsfield, Mass., has severed his connection with that company.

Moses Suttleworth, superintendent of the spinning department at the Washington Mills, Lawrence, Mass., has been promoted to the position as agent of the Wood Mills to succeed the late Alvin Lyons.

Fred Marshall has accepted a position with J. D. Armitage, who assumes to open a weaving mill on Island Street, Lawrence, Mass. Mr. Armitage

was for a number of years connected with the Arlington Mills, Lawrence, Mass.

Fred Barber, chief engineer for the Moosup Mills, American Woolen Company, Moosup, Conn., has resigned and entered into the automobile business at Bristol, R. I.

A. O. Davidson, general manager of the Aetna Mills, Watertown, Mass., has severed his connection with that company after 40 years of service. The position made vacant by Mr. Davidson's resignation has been filled by F. W. Freeman. Mr. Freeman has been connected with the Aetna Mills for a number of years.

Adam MacWhinnie, for the past 18 years general manager of the Hebron Mfg. Company's Mill at Hebronville, Mass., has resigned. He has been succeeded by Walter J. Howland who for the past 20 years has worked for the B. B. & R. Knight Company's mills. Mr. Howland was promoted to the position while Mr. MacWhinnie was general manager. He was in the weaving department at the Warrenton Mills some years ago, a position he resigned later to accept a position with the Anthony Mills. In 1888 he left to go to the Natick Mills and has worked in various positions of trust for the concern for many years. There will be no superintendent engaged, as Mr. Howland will look after the mill in the capacity of general manager. He is a prominent member of the National Association of Cotton Manufacturers.

John Horan, superintendent for the Saxton's River Woolen Mills, Saxton's River, Vt., has accepted a position as superintendent and designer for the Thomas Kitson & Sons Mill, Stroudsburg, Pa.

Alfred Jones has accepted the position as overseer of carding at the Pine Tree Worsted Company, Elmville, Conn. He was formerly employed at the Northboro Woolen Mills Company, Chapinville, Mass.

L. H. Corey has accepted the position as overseer of spinning at the Pine Tree Worsted Company, Elmville, Conn. He was formerly employed at the Northboro Woolen Mills Company, Chapinville, Mass.

Harry P. Hunter, one of the best known mill men in Manchester, N. H., for the past 28 years connected with the Stark Mills, assumes the superintendency of the Boott Mills, Lowell, Mass.

Wm. H. Jennings, who was elected treasurer a short time ago of the Osborn Mills, Fall River, Mass., has tendered his resignation on account of ill health. The resignation was accepted and Simeon B. Chase, the former treasurer was chosen to fill the vacancy. It was unanimously voted to offer the treasurership to James T. Milne at a meeting held by the directors recently.

David Campbell was elected president; Henry A. Francis, general manager and treasurer; Thos. F. Plunkett, asst. treasurer and Clifford Francis, asst. superintendent at the Pontoosuc Woolen Company at a meeting held by the directors recently.

Pres. John Golden of the United Textile Workers, Fall River, Mass., has recovered from his recent illness and is again busy with his usual work.

J. B. Barry, formerly superintendent for the Hope Worsted Mills, Louisville, Ky., was shot and seriously injured by negroes in a race riot near Dixon, Ky. He is in a critical condition in the hospital at Evansville, Ind.

Chas. Holdsworth, superintendent of the Pitkin, Holdsworth Worsted Company, Passaic, N. J., celebrated the 55th anniversary of his birth March 13. He received many valuable gifts. He was born in Bradford, England.

W. J. Hamilton has accepted a position as second hand in the card room at the Fairfield Miils, Winnsboro, S. C.

H. V. Deaver has accepted the position as overseer of carding, nights, at the Maple Mills, Dillon, S. C., succeeding R. W. Scott.

W. C. Hendricks has accepted the position as overseer of carding at the Chadwick Mills, Charlotte, N. C. He comes from Lancaster, S. C.

R. L. O'Pray, assistant superintendent at the Capital City Mills, Columbia, S. C., has been appointed general manager of the No. 3 Mills of Mark Morgan, Laurel Hill, N. C.

J. D. Ezell has been appointed superintendent of the Aurora Cotton Mills, Burlington, N. C. succeeding J. T. Moreland. He comes from Greensboro, N. C.

J. L. Scruggs has accepted a position as overseer of carding at the Gaffney Mfg. Company, Gaffney, S. C.

J. D. Melton has accepted a position as chief engineer and master mechanic at the York Mills, Yorkville, S. C. He comes from King's Mountain, N. C.

C. D. Scott, chief engineer and master mechanic, has accepted a position at the Calumet Mfg. Company, Liberty, S. C. He comes from Honeapath, S. C.

B. M. Holland, treasurer and secretary of the Holland Mills, Gastonia, N. C., has severed his connection with that company. His successor has not as yet been chosen.

O. H. Howard, overseer of carding and spinning at the Pee Dee Mills, No. 2, Rockingham, N. C., has accepted a position as overseer of carding at Kannapolis, N. C.

S. C. Cain, overseer of carding and spinning for the Trenton Cotton Mills, Trenton, Tenn., has resigned.

J. C. Keller who accepted the position as overseer of carding and spinning a few months ago at the Lula Mills, King's Mountain, N. C., has been appointed superintendent of the same mill, succeeding C. R. Harmon, who resigned.

R. F. Gardner has accepted a position as overseer of carding at the Lula Mills, King's Mountain, N. C. N. G. Coniger has accepted the position as overseer of spinning at the same mill.

Wm. C. Bennett, overseer of carding at the Newburg Steam Cotton Mills, Newburg, N. Y., has severed his connection with that company.

Rawdon Taylor, manager of the Perth Woolen Mills, Perth, Ont., Canada, has resigned. The position has been filled by C. H. Mackie.

Chas. Bain, overseer of finishing at the Cold Spring Bleach & Dye Works, Yardley, Pa., has again returned to the Lyondale Bleach, Dye & Printing Works of Rockaway, N. J.

Carl M. Klebart has accepted a position as loom fixer at the Brickner Woolen Mills, Sheboygan Falls, Wis. He was formerly employed at Webster, Mass.

E. A. Mansfield, agent of the Hecla Mills, American Woolen Company, Uxbridge, Mass., has been elected vice-commodore for the Nipmuc Canoe Club.

Ake Hugo, designer at the Lincoln Mills, Pascoag, R. I., operated by Fred L. Sayles & Company, has severed his connection with that company and has left for his home in Sweden.

Wm. Monaghan, overseer of the reeling department at the Arlington Mills, Lawrence, Mass., has severed his connection with that company.

Leon Blanchard, bookkeeper for the Everett Mills, Lawrence, Mass., has resigned.

G. E. Richardson, second hand in the carding department at the Cocheco Mills, Dover, N. H., has resigned and accepted a position at Kansas City, Mo.

Fred Naylor has accepted a position as overseer of bleaching for the New Haven Webbing Company, Hamden, Conn. He was formerly employed at Philadelphia, Pa.

Joseph Shaughnessey, overseer of finishing at the C. A. Root & Company's mill, Uxbridge, Mass., has severed his connection with that company and accepted a similar position with the Earnsdale Worsted Company, Clinton, Mass.

G. M. Warwick has severed his connection at the Falls Company, Norwich, Conn., and accepted a position in the finishing department for the Pacific Mills, Lawrence, Mass. Mr. Warwick held the position as overseer of finishing at the Falls Company and was presented with a beautifully engraved gold fob and locket as a token of the esteem in which he was held by the employes.

F. K. Treadway has accepted the position as overseer of carding at the Beaver Dam Woolen Company, Beaver Dam, Wis. He was formerly employed at the Wallace & Smith Blanket Mills, La Porte, Ind.

Victor L. Demers has accepted a position as overseer of dyeing at the Worcester Woolen Mill Company, Worcester, Mass. He was formerly employed at the Merchants Woolen Mill, East Dedham, Mass.

John Deavitt, formerly overseer of weaving at the Excelsior Mills, Farnumsville, Mass., has been transferred to the Uxbridge Worsted Company, Uxbridge, Mass., same company.

Clarence C. Chace has severed his connection with the Adams Mfg. Company, Shelton, Conn., as overseer of carding, and accepted a position with the Monohansett Mfg. Company, Putnam, Conn.

David Buyers has accepted the position as overseer of weaving at the Excelsior Mills, Farnumsville, Mass. He was formerly employed at the Sutton Mills, North Andover, Mass.

John Connell, formerly in charge of the Cohannet No. 3 Mill of the New England Cotton Yarn Company, Taunton, Mass., is being considered in connection with the position of agent of the Corr Mills, at East Taunton, Mass.

Francis S. Douglas for the past three years assistant superintendent of the Sawyer Mills, American Woolen Company, Dover, N. H., has severed his connection with that company.

Rufus A. Soule, Jr., has resigned the position as overseer of the Taber Mills, New Bedford, Mass., and will leave for New York about April 1st to take a position with a large cotton brokerage concern. His successor has not been chosen.

Geo. Lawson, formerly overseer of dyeing at the Worcester Woolen Mill Company, Worcester, Mass., has accepted a similar position at the Merrimack Mills, Lowell, Mass.

Geo. Senior for the past nine years employed in the counting room at the Hamilton Mfg. Company, Lowell, Mass., has resigned to accept a position at Seattle, Wash.

A. H. Landry, overseer of weaving at the Reliance Worsted Company, Norwich, Conn., has severed his connection with that company.

R. G. Henderson, pres. and agent of the Seneca Falls Woolen Company, Seneca Falls, N. Y., has severed his connection with that company.

C. H. Chisholm has accepted a position as overseer of dressing, spooling, warping and twisting for the Hebron Mfg. Company, Hebronville, Mass. He was formerly employed at the Arlington Mills, Lawrence, Mass.

Martin J. Nelson, overseer of finishing at the Pioneer Worsted Mills, Wickford, R. I., has severed his connection with that company. His successor is John G. Kearns, who comes from Uxbridge, Mass.

Percy A. Simons has accepted the position as superintendent of the Atlas Underwear Company, Piqua, Ohio He was formerly employed at the Watson Mfg. Company, Paris, Ont. Canada.

David Campbell was elected general manager and treasurer of the Pontoosuc Woolen Company, Pittsfield, Mass., Henry A. Francis, superintendent; Clifford Francis, assistant superintendent, and Thos. S. Plunkett, assistant treasurer, at a meeting of the directors recently held.

Wm. Bagley has accepted a position as overseer of weaving at the Pine Tree Worsted Company, who have recently taken over the Elmville Mills,

Elmville, Conn. He was formerly employed at the Danielson Worsted Company, Danielson, Conn.

J. T. Zoss, overseer of carding at the Beaver Dam Woolen Mills, Beaver Dam, Wis., has resigned.

Daniel Shea has accepted a position as overseer of finishing at the Rock Mills, Rockville, Conn., succeeding James McGeough.

Frank L. Coggswell, overseer of finishing at the Faulkner Mfg. Company, Stafford Springs, Conn., has resigned and accepted a similar position at the Ellis No. 2 Mill, Monson, Mass.

Joel Pearson has accepted a position as boss dyer for E. V. Morris & Son, Akin, N. Y.

W. H. Chadwick, formerly connected with the Algonquin Printing Company, Fall River, Mass., has severed his connection with that firm and is interested with W. H. Carter of Memphis, Tenn., in the organization of a new company, to be located at new South Memphis.

Geo. Thonnaver has accepted the position as overseer of spinning at Paris, Ont., Canada. He was formerly employed at Bennington, Vt.

Chas. Alden, master mechanic at the Palmer Mills, Three Rivers, Mass., has severed his connection with that company. His successor is C. Cole, of Manchaug, Mass.

Thomas Currigan, finished cloth examiner for the Montrose Woolen Company, Woonsocket, R. I., has severed his connection with that company, and accepted a similar position at Skowhegan, Me.

Webster M. Pike, overseer of dyeing at the Salt's Textile Mfg. Company, Norwalk, Conn., has severed his connection with that company and accepted a similar position with the Allentown Woolen Company, Allentown R. I.

W. E. Mullins has accepted a position as assistant overseer of weaving at the Fulton Bag & Cotton Mills, Atlanta, Ga.

Theodore Belanger, bookkeeper at the Lawton Spinning Company's Mill, Woonsocket, R. I., has severed his connection with that company, a position he has occupied for several years.

Lionel Helliwell, assistant designer at the Taconic Mills, Pittsfied, Mass., has severed his connection with that company.

P. T. Donahue, for the past three years overseer of finishing at the Montrose Worsted Mills, Woonsocket, R. I., was agreeably surprised by being presented with a handsome roll top writing desk by the help employed in the finishing department at the Montrose Mills. Mr. Donahue expressed his gratitude and said that the remembrance would never be forgotten.

Joseph Spencer, overseer of dyeing at the Arlington Mills, Lawrence, Mass., has severed his connection with that company. He is succeeded by James H. Clifford, who has been employed at the Pacific Mills, same city.

DEATHS.

Noah Schwab, head of the cotton converting house of Schwab & Wolf, died at his home, 2 West 86th St., New York City, February 25, of pneumonia. He was 48 years of age and leaves a wife and one son.

James J. Sullivan, president of the J. Sullivan & Sons Tape Mfg. Company, Germantown, Philadelphia, Pa., died at the St. Agnes Hospital, in that city, after a short illness.

Alfred Dolge, the father of the well known Alfred Dolge, who was the founder of Dolgeville, N. Y., died recently at the advanced age of 85 years. He was an experienced felt maker and came to this country after his son had established the flourishing village of Dolgeville.

Chas. W. Phillips, a well known manufacturer of Gloversville, N. Y., died at his home March 5th. For several years he had been conducting a clothing store and entered later in the glove manufacturing business.

Benjamin Bullock died at his home on Locust St., Troy, N. Y., at the age of 74 years. He was one of the oldest wool merchants in that city and was formerly senior member of the firm of Benjamin Bullock & Sons and later Bullock & Wunder.

Clark Hagmann, proprietor of the Glen Rock Mills and vice-president of the Somersville Woolen Mills, Somersville, N. J., died at his home in Somersville, at the age of 38 years.

Thomas Wilson, senior member of the firm of Thomas Wilson & Company, lace importers, Manhattan, N. Y., died at his home in Brooklyn, N. Y., at the age of 82 years.

John J. Rowe, who had successfully conducted the Westshore Knitting Mills, Amsterdam, N. Y., died at his home in that city, March 7th at the age of 74 years. He is survived by his wife and two daughters.

Levi Lamb, one of the oldest residents of Holyoke, Mass., died at his home on Lincoln St. in that city after a long illness. He was born in Burrillville, R. I., Sept. 22, 1812, and was employed in cotton mills as an overseer of dressing and followed the cotton business until 1860, being employed at that time at the Lyman Mills, Holyoke, Mass.

Martin V. B. Jefferson, a prominent woolen manufacturer of Worcester, Mass., and a member of the executive council under Gov. Wolcott and Gov. Crane, died at his home in that city, March 11. He was born in Uxbridge, Mass., in 1834 and established a woolen business in Holden, Mass. For ten years he held the position as selectman of Holden, and in 1875 moved to Worcester, where he became prominent in politics. He was represented in the legislature in 1880 and 1881.

Daniel E. Chace, bookkeeper for the American Linen Company, Fall River, Mass., died at his home an Durfee Street in that city as a direct result of a paralytic shock sustained more than a year ago. He was widely known in mill circles and

served faithfully for this company for a number of years.

James S. Knowlson, formerly a manufacturer of woolen goods at Troy, N. Y., died at his home on Washington St., Rutland, Vt., March 17. He was born at Albany, N. Y., May 1, 1823.

Jeremiah C. McCarthy died suddenly at his home, 54 Osgood St., Lawrence, Mass. He had been connected with the Essex Dye Company for a number of years.

Elisha P. Harvell of Rockland, Mass., a wealthy manufacturer, died at the Boston Relief Hospital following an attack of heart failure. He was president of the Rockland Webbing Company and also connected with the Rockland Welting Company at the time of his death. He was born in South Weymouth, Dec. 19, 1841.

Frederick A. Claflin, treasurer and general manager of the Avery Chemical Company, Boston, Mass., died very suddenly of heart failure on Saturday, March 14. He was 60 years of age, and well known in the woolen and leather trade. He leaves a widow, three daughters and one son.

Thomas Rickards died March 14 at Blackstone, Mass. He was a woolen finisher by trade and came to Blackstone as overseer of finishing in 1886 and remained with the No. 1 Mill until 1894.

Wm. C. Morton was found unconscious between Berkshire Mills, Nos. 1 and 2, on Saturday, March 14, and died at his home shortly after being removed there. He was born in Scotland and had lived the greater part of his life at Renfrew. He was employed as a loom fixer.

Hezekiah Brayton, treasurer of the Sagamore Mills, at Fall River, died suddenly on March 24 after a short illness, which, however, had not been considered serious. He was the last of the five brothers of the famous Brayton family which did so much for the up-building of Fall River. He was 75 years old at the time of his death. His early life was spent in the cloth brokerage and banking business. When the Sagamore Mills reorganized in 1879 he was elected treasurer and held that office until the time of his death. The success of this mill in the last few years is well known.

John Good, closely identified with the cordage trade all his life, died at his home in Brooklyn recently in his 67th year. He was born in Ireland, came to this country in boyhood with his parents, learned the machinists' trade and worked in a rope walk in Williamsburg. He invented and took out many valuable patents and later went into the cordage business and organized several companies, at one time being head of the National Cordage Association. He retired from business about ten years ago. He was a member of many clubs and organizations and in 1887 was made a Count of the Holy Roman Empire by the Pope, although he never assumed the title.

Alfred Schiffer, of the silk firm of Pelgram & Meyer, 85 5th Ave., New York, N. Y., died at his home, 12 E. 66th St. after an illness of two weeks. He was 54 years of age and had been connected with the above firm for the past twenty years. He was born in New York and leaves a wife and two daughters.

Austin C. Grove, 80 years of age, died at his home in Ludlow, Mass., February 28 after an illness which dates back to last fall. Mr. Grove was born in Lexington Feb. 17, 1828, and was employed in various capacities at the Ludlow Mfg. Company and later accepted the position as master mechanic.

B. Newsome, proprietor of the Byram Mfg. Company, Chester, Pa., died at his home in that city after an illness of several months. He had been in the manufacturing business in Chester and was a veteran of the Civil War.

John H. A. Klauder, president of the Klauder-Weldon Dyeing Machine Co., died recently at his home on West Allegheny Ave., Philadelphia. He was 66 years old and had somewhat withdrawn from active business for a number of years, although he had kept closely in touch with his large interests. As a manufacturer, inventor and machinery builder he was widely known in the textile trade, and in his retirement retained many warm friendships with old business associates. He took a great interest in the collection of curios, and particularly Japanese and Chinese works of interest and art, and in his spacious grounds reproduced one of the famous gardens of Japan. He was a great traveler and had made many trips abroad. His wife survives him, also his sister and four brothers. The business enterprises with which he was connected were so well organized that they will proceed without interruption. His successor has not yet been elected.

Thos. A. Laughlin, assistant foreman in the card clothing department of the Whitin Machine Company, Whitinsville, Mass., died at his room in the Blue Eagle Inn, February 29, the result of a shock. He had an attack of grip which left him in a somewhat weakened condition, but during the past week appeared to be rapidly gaining strength. His death was a surprise to his many friends. He leaves a father, two brothers and a sister, and was 34 years of age. He was formerly a native of Uxbridge, Mass.

Capt. Geo. H. Grant, for 36 years superintendent of the Eagle Cotton Mills, Woonsocket, R. I., died at his home in East Woonsocket, March 3, at the age of 70 years. He retired from the superintendency of the Eagle Mills December 11 of last year. He was one of Woonsocket's first mayors and was born December 11, 1837. With the exception of a brief interval, he always lived in that city.

New Publications.

[Any work noticed under this head can be obtained through the office of this journal.]

Air Conditioning; by G. B. Wilson; 138 pages 4 1/2 by 7; John Wiley & Sons; price, $1.50.

The reader finds scattered through the book much useful information regarding moisture in the air of textile mills and in textile materials. It falls, however, far short of that completeness essential in a technical work. The author has attempted to cover the entire subject in a small volume, and as a result the references to many important matters are of the most meager description. For example, the important question of standards of regain, which is now claiming special attention, is disposed of by Mr. Wilson in five lines as follows:

"The standards of regain can be taken as follows:

Cotton,	8½ per cent.
Worsted,	18¼ per cent.
Silk,	11 per cent."

This is preceded and followed by reading matter dealing with wholly distinct branches of the subject. This incompleteness and faulty arrangement run all through the work, being especially evident in the references to climatic conditions and to the various types of apparatus for the artificial moistening of air. The importance of moisture in textile mills and materials makes it especially desirable for the trade to have a thoroughly reliable and reasonably complete work on this subject. The work under review fails to supply the want.

Patent Practice (Patentpraxis); by Dr. Lucian Gottscho, patent attorney; 275 pages, 5 by 7; Der Deutsche Kaufmann, Berlin, W 62; price, $1.00.

This book, which has reached the third edition, gives a concise statement of the leading points of the German patent laws. All superfluous material has been excluded and the result is a convenient and useful handbook for all having to do with German patents. The volume also contains the German patent law. The text is in German.

The German Textil Industrie (Die Deutsche Textil-Industrie); Verlag fuer Boersen-und Finanz-literatur, Berlin and Leipzig; price, $2.50.

This is a statistical year book giving information as to the organization and financial condition of corporations in the German textile trade. This includes date of organization, class of business, capital, business year, latest financial statement, dividend record, names of officers and directors and other information of similar character.

Celluloid and Its Manufacture (Zelluloid und seine Verarbeitung); by Louis Edgar Andes; 374 pages, 5 by 7 1/2; A. Hartleben, Vienna and Leipzig; price, $2.00.

The lack of literature relating to the manufacture of celluloid makes this work especially welcome. It deals only in a general way with camphor celluloid, the author having confined himself mainly to a consideration of those forms of celluloid in the manufacture of which substitutes for camphor are employed. The composition and manufacture of these are treated very thoroughly, and special attention is devoted to incombustible and slow burning celluloids. There are many excellent illustrations and an excellent index. The text is in German.

More, A Study of Financial Conditions Now Prevalent; by George Otis Draper; Little, Brown & Co., Boston; price, $1.00.

The author of this timely book needs no introduction to textile circles. He has made a reputation as a writer and speaker on textile topics and in "More" he presents a "business man's views of live issues."

The scope of the book is broader than the title implies, for not only are financial conditions discussed, but the broad problems of our time and country which are in the minds of serious thinking men. The labor question, the trust problem, the tariff issue, the rights of property and labor, and the inter-relation of all these questions are discussed with clearness, vigor and plain speaking that is refreshing.

Mr. Draper believes that we are drifting towards socialism and he points out the fallacies of this theory as well as the false pretenses of the anarchists. The chapter on Tariff and Tariff Revision is one of the clearest statements of this intricate subject that we have read. He strips it of its frills and shows it to be simply the barrier that is interposed between the level of low foreign wages and high American wages, and that not only wages, but the whole basis of American life is adjusted to a higher standard, which must be maintained by keeping the tariff barriers up high enough to accomplish their purpose. He truly says that the free trader and would-be tariff reducer make their strongest points in harping on the big profits of the protected manufacturers and employers and appealing to the envy of the poor for the prosperity of those better off: "What they really want is to buy the products of cheaper labor. Let them put that issue frankly before the voters."

The author points out with frankness our American prodigality and waste in our spending and living, and that we are wasting by our improvident habits far more than could be gained by any of the profits wrung from the trusts.

Perhaps the most radical suggestion he makes is that the issue of government money should be based on values that increase in quantity as trade increases and as new values are created. Presumably this means asset currency based on actual industrial values on new evidences of property.

No one need be deterred by dread of a dry treatise from reading this book. It bristles from beginning to end with thoughts that have been vaguely in many minds and which here find brilliant expression. The employer, the employee and property owner, great and small, will find in it stimulating ideas and food for thought even if they do not agree with all the conclusions of the author.

The Manchester Ship Canal Co.'s Offices.

The Manchester Ship Canal Co.'s offices, which have been located in the Bowling Green building for some ten years, have been moved to the Produce Exchange building, New York City.

This change has become necessary owing to the development of business with the port of Manchester and the need found by the representative of the company here to be in closer touch with the members of the Produce Exchange, of which association Capt. Armstrong is a member.

The Canal Co. has been successful in securing space upon the Exchange floor itself immediately facing the entrance to the Exchange upon the main floor at the Beaver St. end of the building.

Since the establishment of the New York office, the business to Manchester from Atlantic ports has shown most satisfactory increases and several new lines have been started. Manchester has made its influence felt in connection with shipments from the United States and Canada to Great Britain, as well as in transhipment traffic for points beyond Manchester by both water and rail.

"K-A Kernels."

The Kip-Armstrong Co., Pawtucket, R. I., has recently issued Volume I, Number 1 of "A Midget Magazine for Mill Men containing the meat of the warp stop-motion question" with the spicy title of "K-A Kernels." It is a booklet which one is pretty sure to read through from beginning to end, because it is attractively presented, can be digested in ten minutes' time and has a lot of information on a topic that has a very live interest.

A Brain Clearing House.

More than ever, manufacturers are looking to responsible Registry Bureaus or Employment Agencies to fill places as heads of their departments. This is in line with development; which really means specialism. When any function—such as securing the best man for a place—is conducted by a special agent who has facilities for investigation, and is in touch with hundreds of competent men, and who conducts his work with the knowledge that each individual case must be considered in the light of its peculiar requirements, efficiency must rise.

The basis of satisfactorily filling a position of responsibility is in having suitable material. Where the employer knows of perhaps two or three good men, the Registry Bureau is in touch with practically all the men in that line, who are looking for a change. The result is that the employer's time is saved. He has only to decide among a few of the most suitable men, as only the best are referred by the agent. The further result is in the reducing of the possibilities of employing a totally unfit person, necessitating another change. Aside from the selection of the best agent to supply men, the manufacturer is relieved of duties for which he has neither the time nor facilities.

New Filter Department.

The American Water Softener Company announce that they have opened a filtration department. They solicit inquiries from those contemplating the installation of water filters of any capacity, and an opportunity to quote prices on apparatus guaranteed to produce satisfactory results under all conditions. The filtration department is under the management of Geo. F. Hodkinson, for many years prominently identified with the filter industry. Mr. Hodkinson has had extensive experience in installing filtration plants under all conditions to meet any requirement. The company will gladly make without charge analyses, recommendations, sketches and estimates for either filtration or water softening plants for any who contemplate such installations. Its filter installations will be of the same high character and efficiency as its favorably known and extensively used water softening plants.

"Vigogne" Yarn.

To the Editor of the Manchester Guardian:

Sir: In your "Commercial and Financial Notes" of today's issue you mention "the woolen (vicuna) spinners in the Crimmitschau, etc., districts of Saxony." Allow me to point out that vigogne yarn (vicuna) is not, as its name would lead one to believe, woolen, but cotton yarn.

Originally, no doubt, vigogne was all wool with occasional small additions of cotton. The appearance of the substantive cotton colors about the eighties made it very easy to dye wool and cotton in the same bath, and they also left the cotton soft and open and easy to spin. This led to regular additions of cotton, which kept increasing steadily from year to year until the yarns contained more cotton than wool. Today vigogne yarn is all cotton, and all it has in common with its original raw material is its "woolly" appearance, which is chiefly obtained by dyeing the cotton with substantive colors in the loose state before it is spun. Yours, etc., H. F.

Finishing Sized Fabrics.

Bobbinet and other fabrics are usually dressed by means of rollers from which the fabric passes to a stretching frame, where the size is uniformly spread over the surface. An invention patented by Marius Ratignier, of Lyons, and H. Pervilhac & Co., of Villeurbanne, deals with improvements in the spreading mechanism. It is proposed to drag brushes or loose chains over the fabric, or even squeegees. These spreaders are moved over the fabric by mechanism so as to secure even distribution of the size. They have the advantage that they do not become clogged by the size, and that their action can be continued when the fabric is half dry, without deteriorating the dressing, the latter being on the contrary polished by that means.—The Dyer & Calico Printer.

Trade-Mark Advertising.

The man who trademarks and advertises his goods, and gets retailers to handle them, owes a debt to those retailers who do buy his goods, and who sell them in their stores.

There is a moral obligation that the advertising shall help the retailer in every possible way, to sell these goods which bear his trademark and which he advertises:—an obligation to see that no part of the interest or demand which is roused by the advertising shall be needlessly lost—but that every possible atom of this interest or demand roused by the advertising shall be directed to the counter where the goods are on sale,—to the point where this demand can work for the benefit and profit of the retailer who has joined hands with the advertiser.—Delineator Bulletin for Advertisers.

The Lestershire Spool and Manufacturing Co.

Upon a recent visit to the works of the Lestershire Spool & Mfg. Co., at Lestershire, N. Y., we found that company well quartered and equipped for the turning out of their product, which consists of a large line of high grade spools for cotton, woolen and carpet mills.

The main factory of this company is of reinforced concrete construction and covers about 28,000 feet of floor space. This concern has been in existence since 1903 and claims to have the largest spool manufacturing plant in the world. The officers of the company are R. W. Clinton, president; A. L. Dickenson, vice-president, and H. D. Clinton, treasurer and general manager.

This company enjoys the reputation of turning out spools of a very high grade and their customers include the representative mills from all over the United States, doing a particularly large business in the Southern states. Their business has grown continuously and has now reached large proportions.

They will be much pleased to furnish mills with quotations for any desired style of spools and feel satisfied that they can maintain their reputation both as to prices and quality. We take pleasure in recommending them to anyone requiring goods of their make.

Steaming Prints.

Steaming dyed or printed goods is usually done when the goods are motionless in a room filled with steam. Dr. V. Fussganger, of Hoechst on the Main, Germany, proposes that the piece should travel through a current of steam going in the same or in the opposite direction. One great advantage is that the steam current rapidly drives all air out of the steaming chamber. In the ordinary process the air is expelled very slowly, and probably never completely. With hydrosulphite discharges, etc., it is most important to have no oxidizing agent, such as air, present.—The Dyer & Calico Printer.

British Weights and Measures.

The feature of a case heard at Altrincham recently was the statement made by a witness, Joseph Clough, to the effect that he could tell the weight of pigs by their squeaks. Philip Leather, of Lymm, was charged with obtaining 20s. by means of false pretences from Mrs. Charlton, pork butcher, Altrincham. The accused sold four pigs to the prosecutrix, receiving £1 on account and agreeing to deliver them, but this he failed to do. Joseph Clough said he went to see the prisoner, but did not see the pigs. He heard them squeal, but they were not much more than 50 lb. weight. "I can tell the weight of a pig when I hear him squeak."

The evidence showed that the pigs were not ready for killing, and that the wife of the accused claimed them as her property. The accused had also sold them to two other people. He was fined 50s., including costs.—Manchester Guardian.

A Hot Blast Outfit.

The Massachusetts Fan Co., of Watertown, Mass., are furnishing for the Clarendon Clay and Mining Co., North Clarendon, Vt., a complete hot blast outfit for drying Kaolin. The apparatus consists of a steam heater and one of the Massachusetts ball bearing fans. The adaptability of this type of fan is shown by the fact that when the balls are once packed in vaseline, no further attention is required for at least six months.

Low Wages.

The Berlin correspondent Daily Chronicle, London, writes as follows about bad trade in Germany:

"Affairs are probably worst in South Germany, notably among the weavers of Bavaria working in their own homes. Cases are cited, where a man, his wife and two grown-up children, working fourteen hours a day, are unable to earn more than from $4.00 to $4.50 a week.

The White Oak Mills, controlled by the Proximity Mfg. Co. of Greensboro, N. C., has lately entered its third order with the Green Fuel Economizer Co. for an equipment of economizers. These mills are said to be the largest denim mills in the world, employing 1,300 operatives and working up about 145 bales of cotton per day, on the average. The buildings are of the latest improved construction, with saw tooth roofs to secure good lighting and other modern improvements and machinery. Some of the machines do the work for which 12 persons are required in other mills. This is the third order for Green economizers from the White Oak Mills. In addition, the owners have bought a Green economizer for the Proximity Mills, two for the Minneola Mills, and two for the Revolution Mills, making a total equipment of about 8,000 h. p.

The "London Shrunk" Process.

The following letter to "The Textile Mercury" has reference to an article in that journal which was published in our March issue:

Sir,—Your article on the above subject is not quite accurate. The process of winding the cloth on to a perforated roller and blowing steam through it, is not so much to shrink the cloth as to give it a fine silky appearance, and to make the finish permanent. It depends on the material, and the finish required, whether the cloth is left on the roller to cool or is taken off hot. A piece which has been through this process will not take up sufficient moisture in running through a tank of water for shrinking purposes (except, perhaps, in cheap cloths); and as to using the hydro-extractor, many cloths would be marked by the creases and would require refinishing. The proper way to get the cloth thoroughly saturated with water is to fold it along with a wet wrapper and allow it to stand a sufficient length of time to take up as much moisture as the cloth is capable of receiving. This process gives the cloth an opportunity of shrinking as much as is possible. It should be afterwards dried and pressed, in the way your correspondent states. Many cloths are spoiled by the shrinkers. A manufacturer makes a soft lofty-handling cloth for overcoats, carefully avoiding the pressing process, or, perhaps, raising the pile after pressing; the goods are then sent to the shrinkers, who damp and press them, making a different cloth entirely. The result is that they find their way back to the manufacturer to be refinished. Then again, some cloths have a nap or some other specially treated face, which is easily spoiled by being rubbed over drying rods while wet; these cannot be set right by pressing in the ordinary way, they must be refinished by the manufacturer. Thick lofty overcoatings, and cloths which have been specially treated, ought not to be sent to shrinkers; the manufacturer should be asked to thoroughly shrink them before the final finishing process.—Yours, etc.,

Practical.

Business in Japanese Mills.

With regard to the cotton-spinning enterprise, which is necessarily suffering from the depreciation of silver, the Mitsui Bussan Kaisha, who are the principal agents for the sale of cotton yarns in China, have formulated a project for reducing production by giving three additional holidays every month to the operatives and thus making the days of rest five instead of two. The effect of this would be to diminish the output by from 7,000 to 10,000 bales (Japanese bale = 400 pounds) per month. At the same time the Mitsui Bussan Kaisha are said to have asked that the period for disposing of yarns should be extended by one month, and that, in the case of contracts already existing between the firm and the manufacturers, payment by the former should be deferred for a similar period without interest. The scheme seems to be encountering some opposition, but it is thought likely to be ultimately adopted. It relates to the coarser grades of yarns only.—Japan Daily Mail.

Jaquard Stamping and Card Cutting.

An interesting announcement is made in our advertising columns by Pierre Vial, Roubaix, France, who announces that he is prepared to do the above work rapidly and economically for American manufacturers.

The Buyers' Club.

A new type of business building is under way in St. Louis which presents many practical features never before carried out on such a large scale, and others of perhaps equal value which have never been utilized anywhere before.

It is to be called the "Buyers' Club Building," and its cost, it is estimated, will be fully $4,000,000. Eames & Young of St. Louis are the architects, and the building was promoted and will be financed by H. A. Vrooman, President of the State Trust Company, of St. Louis, who has erected some of the largest apartment houses in that city. The Buyers' Club Building will occupy the entire block bounded by 17th, 18th, Chestnut and Pine Sts., a location within one block of the St. Louis Union Station, and a suitable one for all visitors to the city.

The most important feature the Buyers' Club presents is the plan for bringing the buyer to the seller. The fare of 10,000 buyers will be paid to St. Louis annually by the building company, and the exhibitors will choose the buyers who are to be brought. Special trains will be hired by the company and run from distant points where dealers from a considerable radius can be gathered. The building is designed to extend the territory St. Louis supplies, so that exhibitors will enjoy not only the immense trade of the southwest which now centers in St. Louis, but that of all the central west and northwest as well. Only a limited amount of space will be leased to each exhibitor so that the exhibits may be sufficiently comprehensive to attract the best classes of buyers from great distances.

A Club Bulletin will be published monthly and sent to over 100,000 retail buyers. A close organization of all the retailers in the central and southern states will be promoted by the Club Management and extensive plans for the benefit of the various retailers are under way.

The Northern Engineering Works.

The Kelley Bros.-Mitchell Co. of Vancouver, N. C., have installed a 15-ton Northern traveling crane, 40-foot span, equipped with alternating current motors. The crane was furnished by the Northern Engineering Works of Detroit, Mich.

A Rigid Timber Floor.

In the design of the new jute mill of the Columbian Rope Co., at Auburn, N. Y., the architect. Mr. Charles T. Main, of Boston, has introduced somewhat unusual features in the design of the floors. Because of the large size and excessive weight of the machines in the second and third stories, as well as on account of the vibratory effect of their rotary movement, exceptional strength and stability was required. The columns, spaced on 10-foot bays across the building and on 18 to 24-foot centres lengthwise, are of 16 by 16 Georgia pine. The beams running lengthwise of the mill are of the same size and material, while the flooring is of 6-inch plank, splined and toe nailed together, and covered with ordinary maple top. The result is a practically solid floor which is absolutely rigid and capable of sustaining the heaviest possible loads.

A Story Without Words.

HOW DIXON CRUCIBLE CO. MEETS HARD TIMES.

A Pneumatic Hoist.

The new pneumatic hoist and overhead track equipment of the Detroit Journal Co. is being installed by the Northern Engineering Works, of Detroit, and will be used for handling paper, electrotypes, etc. It is similar in some respects to one installed some time ago in the plant of the Detroit News, by the same firm.

The Ideal Hosiery Printing Co.

In the 1908 edition of the American Directory of the Knitting Trades, just published, the Ideal Hosiery Printing Co. is listed on page 428 among the dyers, bleachers, etc., with Chas. W. Slasy named as proprietor. This is a typographical error and should be Chas. W. Glaser. Their works, which are located at 125 East Herman St., Germantown, Philadelphia, are owned and operated by Messrs. Frank F. Haring and Chas. W. Glaser, and are doing a large business in extracting, dyeing and printing hosiery.

Marked Improvement in Business.

The American Moistening Co., Boston, Mass., report a marked improvement in business conditions, as indicated by number of orders received for their humidifying system during the present month, calling for over 400 humidifiers. These orders are from such manufacturing communities as New Bedford, Lawrence, Philadelphia, New York, New Jersey and the South.

The West Point Mfg. Co., West Point, Ga., has placed an order for the complete equipment of their new Shawmut Mill with humidifiers.

The Potomska Mills, New Bedford, has placed an order with the American Moistening Co. for the equipment of their new weave shed with humidifiers.

The Botany Worsted Mills, Passaic, N. J., have placed a large repeat order for humidifiers with them.

The Monument Mills, Housatonic, Mass., has placed a repeat order.

Atlantic Cotton Mills, Lawrence, Mass., have placed a large order for humidifiers.

They have Messrs. Thomas Henry & Sons' order for the equipment of their mill recently destroyed by fire.

The Clark Thread Co., Newark, N. J., have placed a repeat order for humidifiers.

The Massachusetts Cotton Mills, Lowell, have ordered humidifiers of the American Moistening Co.

As above stated, this is significant of a better feeling in the trade, and they hold a very optimistic view of affairs in general. They believe after the "Conventions", business in all lines will be revived, and conditions will be generally normal.

The Henderson Wool Carding System.

The James H. Whittle Company, Worcester, Mass., owners and manufacturers of the Henderson card for carding wool, worsted, cotton, waste, flax and asbestos, base their confidence in the superiority of their carding processes on the substantial appreciation of customers expressed by the repeat orders they are receiving from them. Manufacturers and overseers of carding are requested to investigate the carding qualities of the Henderson process. The chief claims of the builders of the Henderson cards for their system are increased carding and a greater production, which results, of course, in a direct cutting of the expense in the card room. The former is generally viewed by carders as necessarily entailing increased breakage of fibers with increased waste and a poorer quality of yarn. The reverse seems to be the result in this case, for it is claimed that the evenness and strength of the yarn produced from the ropings is greater, with less waste in carding and spinning. Of special interest to woolen mill men is the production on some grades of woolen yarns of the worsted effect. The present time is a good time to investigate the qualities of Henderson cards. The James H. Whittle Company also builds all kinds of woolen machinery.

Testing Textile Materials.

A lecture on "Textile Testing and Testing Machines," recently delivered at the Bradford (Eng.) Technical College by Prof. A. F. Barker, is reported as follows:

Prof. Barker in the first place emphasized the advantages of systematic testing at every stage in manufacturing. Testing should not be associated with trade disputes and decisions with reference to faults and faulty deliveries, but should rather serve as a preventive—as a means of ensuring the production of reasonably perfect goods, be they tops, yarns, or fabrics. Even this did not by any means cover the field where testing in its several forms might be useful. The running of spinning frames and looms should be carefully checked by the tachometer or tachograph, and also by the dynamo-meter, to ensure that the power consumed was used to the greatest advantage.

Again, the matter of mill lighting had not received the careful attention it merited. With reference to testing for lighting values, two points needed special attention—firstly, there was the absolute light value; and, secondly, there was the manner in which the light arrived at the object to be illuminated. Thus the ordinary electric arc lamp would show a much greater absolute light value; but the inverted arc lamp would illuminate most objects in a manner so much more efficient than the direct arc, that as a practical method of lighting most workshops and mills it undoubtedly took precedence, notwithstanding the large amount of light absorbed and wasted.

In dealing with the production of cloths for the Army and Navy and all goods required up to a given standard, the value of testing in the wool, top, yarn and cloth states was emphasized, the lecturer giving specific cases of an interesting nature coming within his own experience. He had been struck again and again with the real practical value of many tests which on first sight might not be deemed very practical; and he was convinced that with more frequent resort to "scientific method" and scientific tests many difficulties and defects might be foreseen and guarded against which at present were allowed to pass forward until the manufacturer suddenly realized that the goods were defective and there were, perhaps, only a few weeks for remaking to deliver within contract time.

Several examples illustrating this point were specially noted. In the first case cited, the difficulty had arisen of deciding whether a yarn strong on the average but weak in a very few places would weave satisfactorily as a warp yarn. No single-thread tests on the market up to the present time would show this; but by a special invention of the lecturer's—a continuous thread strength tester—it was demonstrated that not only could this be readily decided, but also that such problems as ascertaining the least possible twist for slubbings and rovings, and for such yarns as mohairs and alpaca, might be decided in a few moments to obvious advantage. Another interesting example cited was the development of a rubbing-up and napping defect in an Amazon cloth which might have been readily suppressed in the yarn state had careful testing been in vogue.

With reference to trade standards, it was pointed out that while in two or three cases such standards as the 16 per cent. regain for scoured wools and the 18 1/4 per cent. regain for dry combed tops, etc., needed at least reconsideration, yet the most crying need was for some sort of allowable variation in such matters as counts of yarns, twist, evenness, etc. If it were accepted by the Law Courts that 1,800 ÷ counts of yarn should give the standard breaking strain in pounds of a "lea" or hank of cotton, why should not such matters as those above referred to be dealt with and an allowable variation definitely accepted, anything beyond this variation being liable to rejection? There was much to be gained by the adoption of such standards.

Another matter which needed revision was the method of testing yarns and cloths for strength. As illustrating the difficulties involved, examples were given proving that in breaking a top, yarn, or cloth, there are two factors to consider—namely, actual breakage of fiber and slippage. This latter factor might be most potent, and should certainly be carefully considered in all relative results. It was further pointed out that wool cloths varied in strength very considerably according to the amount of moisture they contained, this variation amounting in some cases to 30 per cent. The lecturer said that he was convinced that wool cloths should be tested for strength in a dried state, in which condition the most practical comparative results would be obtained.

Among the testing machines and apparatus described and exhibited were various tachometers, the tachograph, Thomas's dynamometer, apparatus for comparing the intensities of lights and standardizing, Schopper single fiber and thread-testing machine, the cloth tester as used in the Paris Conditioning House (with the perforation test apparatus of M. Persoz), a continuous single thread tester, and an electric perching and cloth examining table (the two last being the inventions of the lecturer). These exhibits form part of the equipment of the Textile Testing Laboratory of the College, which has recently been instituted on a most satisfactory basis. Among the machines referred to and illustrated by lantern slides, the chief was the cloth testing machine of Messrs. A. S. Caillard, of Paris, the variety of tests which may be performed by this apparatus being clearly demonstrated.

Walter McCook Takes New Selling Agency.

Walter McCook, 576 Bourse Bldg., Philadelphia, has been appointed selling agent for Philadelphia and vicinity for the Woonsocket Worsted Mills of Woonsocket, R. I., and the Stafford Worsted Co., Stafford Springs, Conn.

Both of these mills are under the same management and have fine reputation for their worsted yarns.

F. J. Muir, manufacturing expert for the Cone Export & Commission Co. at Greensboro, N. C., has resigned his position to accept one as general manager of the Holt-Morgan Mills, Fayetteville, N. C.

Expert Advice on Lubrication.

Wm. M. Davis, Lubrication Engineer, and author of "Friction and Lubricants," is now established independently at 93 Broad St., Boston, Mass., and is prepared to make tests and analyses of lubricating oils, reports of lubrication conditions and requirements with a view to reducing costs, and also to prepare specifications for lubrication oils, etc. The wide knowledge and experience of Mr. Davis makes him admirably fitted to perform this work, and his services will be of great value to textile manufacturers. This is pioneer work in the field of textile industries, but has been carried on in the steel and paper industries for years. At the present time Mr. Davis is engaged in reorganizing the lubricating practice in the twenty-seven mills of the American Writing Paper Company and has already brought about a decided reduction in their costs.

The careless waste of oil through improper methods and the use of unsuitable grades are two of the features of the use of lubricants which cause the cost of lubrication to soar to two or three hundred per cent. above a fair cost. Moreover, the results obtained are not so good, and the distribution of oils on floors and walls is a menace to buildings. A specialist can devise a system where better results can be obtained at lower cost. Mr. Davis is prepared to visit mills and make a thorough investigation into everything connected with the use of lubricants, such as handling and distribution, the amounts used in the various departments, tests as to suitability of oils to work performed and their cost, etc. He will then make a report outlining the changes that should be made (involving slight expense in most cases) either in the oils or in the practice of using them—that will intend to reduce the cost. Accompanying the report will be a set of specifications for oils which will meet requirements and which will enable manufacturers to contract for supplies at lowest price. In many of the large manufacturing corporations, men are employed to perform this special work. The services of Mr. Davis will give textile manufacturers the same service and make the use of lubricants and all that pertains to lubrication costs in manufacturing an exact factor in operating expense. Information regarding open dates and charge for services will be given either by a personal interview or correspondence.

Recent Textile Patents.

BRAIDING MACHINE. 881,475. Wilhelm Koerting, Barmen, Germany.

BRAIDS, LACES and Other Narrow Fabrics. Packet for. 881,789. Percy Gardner, New York, assignor to Gardner & Highet Company, New York.

CALENDERING MACHINES. Contrivance for Feeding Moving Fabrics into. 879,298. Wilhelm Mueller, Affoltern, Switzerland.

CLOTH Winding Board. 880,276. Eugene Carraine, Philadelphia, Pa.

COTTON GIN. 880,325. Norman Pearse, London, England.

COTTON and other Fibers. 880,007. Norman S. Brown, Wigan, England.

DYEING Apparatus. 881,097. Louis Destree, Haren, Belgium.

FABRICS. Aging and Steaming Chamber for. 879,867. John E. Gray, New Mills, England, assignor of one-half to George W. Gray, North Adams, Mass.

FABRIC-CUTTING Machine. 879,675. Arnold Roos, South Norwalk, Conn.

FIBER-CLEANING Machine. 881,445. Charles Schofield, Philadelphia, Pa.

FIBROUS Plants. Machine for Disintegrating. 880,661. Emil Hartman, Houston, Tex., assignor of eighty-five one hundredths to Lon C. Hill, Brownsville, Tex.

HEDDLE for Looms. 879,255. Hudson W. Halses, Millbury, Mass.

The object of this invention is to provide a heddle having the body portion composed of a single wire and having a mail or eye formed of wire of the same size as the body portion of the heddle, with the center of the eye coinciding with the axial line of the heddle, and it has for its further object to provide an improved method of construction by which the strength and appearance of the heddle is improved, and the liability

FIG. 1. FIG. 3.

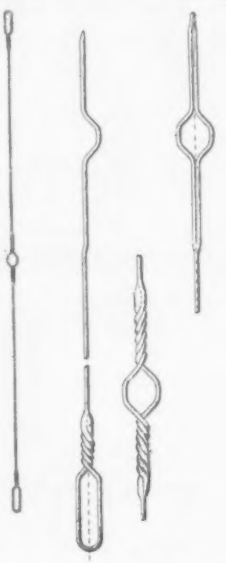


FIG. 2. FIG. 4.

of damage to the warp threads by the friction of the heddles during the operation of weaving is decreased.

Figure 1 is a side elevation of the improved heddle. Fig. 2 is a side elevation, on an enlarged scale, of one of the component wires forming one-half of a heddle constructed in accordance with the invention and also showing the completed loop at one end of the heddle to receive the heald-shaft or lingoe. Fig. 3 is a central section, on an enlarged scale, showing a mail or eyelet, formed by the component wires of the heddle prior to their being twisted together, and Fig. 4 represents the same portion of the heddle when the component wires of the heddle have been twisted together above and below the eyelet.

KNITTING MACHINE Cam-adjusting Mechanism. 879,720. George L. Ballard, Norristown, Pa., assignor to Wildman Manufacturing Co., Norristown, Pa.

KNITTING-MACHINE Stop Motion. 880,013. John S. Crane, Laconia, N. H.

KNITTED WEB. 881,495. Robert W. Scot, Leeds Point, N. J.

LOOMS. Bobbin for Cotton. 879,278. Joseph E. Lemyre, Manchester, N. H.

LOOM-HEDDLE 879,258. Hudson W. Hakes, Millbury, Mass.

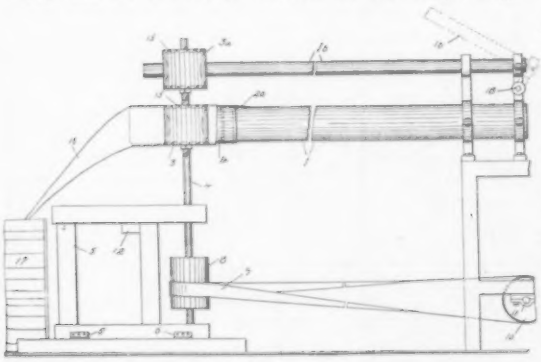
LOOM. Filling-replenishing. 881,063. Clare H. Draper, Hopedale, Mass., assignor to Draper Co., Hopedale, Mass.

KNITTING MACHINE Brake. Automatic. 879,506. George A. White, Bristol, Conn.

APPARATUS for Inverting Tubular Fabrics. 878,995. William B. Palmer, Greenwich, N. Y.

This invention relates more particularly to an improved means for depositing the web of fabric upon the tube preparatory to inversion of the web.

In the operation of the apparatus the feed-rolls, 3, are held removed from the supporting tube, 1, while the end of the tubular web or fabric, 16, drawn from a basket or box, 17, is slipped over the end of the outer section of the supporting



tube, after which the toggle, 12, is operated to release the bearing frames and permit the feed-rolls, 3, to be forced into engagement with the fabric on opposite sides of the supporting tube. As the feed-rolls are rotated, successive portions of the tubular web of fabric are pushed by the feed-rolls inwardly along the supporting tube until the whole web has been thus applied thereto, after which the feed-rolls are again withdrawn from the supporting tube permitting the unobstructed removal of the fabric from the supporting tube during the process of inversion of the web as above described.

LOOM-WARP Stop Motion. 879,853. Joseph Corzilius, South Manchester, Conn., assignor to Ellsworth & Co., New York.

LOOM. Weft-replenishing. 880,810. Alfred Morell, Worcester, Mass., assignor to Crompton, Knowles Loom Works, Worcester, Mass.

LOOM-SHUTTLE. 879,427. John Varley, Jamestown, N. Y.

LOOM-SHUTTLE Tension Device. 879,184. Hamilton Lindsay, Cleveland, O., assignor to the Lindsay Wire Weaving Co., Cleveland, O.

LOOM-WARP Stop Motion. 879,873. Herbert Horsfal, Bridgeport, Conn., assignor to The Salts Textile Mfg. Co., Bridgeport, Conn.

LOOMS. Thin-place Detector for. 879,523. William F. Clayton, Atlanta, Ga., assignor to Clayton & Bentley Co., Atlanta, Ga.

MEASURING DEVICE. Cloth. 879,846. Wm. K. Bayless and Thomas B. Bayless, Lexington, Ky.

WINDING MACHINE. Bobbin. 879,798. Wm. D. Rundlett, North Andover, Mass., assignor to Davis & Furber Machine Co., North Andover, Mass.

Textile Trade Marks Registered.

"Mona." Textile Shoe Linings. The Monda Manufacturing Co., Boston, Mass.

"Elesco." Dress Shirts, Over Shirts, etc. Levi Strauss & Co., San Francisco, Cal.

"Laureline." Broad Silk. Laurel Silk Works, Paterson, N. J.

"Laurelette." Broad Silk. Laurel Silk Works, Paterson, N. J.

"Sun Ray." Broad Silk. Laurel Silk Works, Paterson, N. J.

"Anchor Brand." Waterproof Collars and Cuffs. Capital Collar & Cuff Co., Lincoln, Neb.

"Enoweb." Ginghams, Chambrays, etc. Eno Cotton Mills, Hillsboro, N. C.

"Knitocrat." Undershirts, Drawers, Hose, etc. J. A. Lamy Mfg. Co., Sedalia, Mo.

"Naiad." Textile Fabrics Coated with Waterproof Material. C. E. Conover Co., New York.

"Greek Maid." Muslin Underwear. Younker Bros., Inc., Des Moines, Ia.

"Uncle Sam." Spool Cotton. The American Thread Co., Jersey City, N. J.

"Phoenix." Knitted Mufflers. Phoenix Knitting Works, Milwaukee, Wis.

"Shaw Woven." Hosiery. Shaw Stocking Co., Lowell, Mass.

"The Little Major." Misses' and Children's Cloaks and Suits. E. J. Wile & Co., N. Y.

"Ranger." Men's and Women's Knitted and Netted Underwear. M. Halff & Bro., San Antonio, Texas.

"Mona." Hosiery and Knitted and Netted Underwear. The Mona Mfg. Co., Boston, Mass.

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Half of this is from tight belts.

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The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisements. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in the classification here given such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources. Advertisers whose names do not appear under desired headings will please notify the publishers. Such omissions are accidental, not intentional.

Accounts Financed.
Cathrall, W. M.

Air Moistening System.
American Moistening Co.
Buffalo Forge Co.

Architects and Mill Engineers.
Ferguson, John W.

Asphalt Floors.
Simpson Bros. Corporation.

Asphalt Tanks.
Scaife, W. B., & Sons.

Automatic Feeds for Cotton and Wool.
American Drying Machinery Co.
Kitson Machine Co.
Leigh, Evan A.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Schofield, Wm., Co.
Woonsocket Machine & Press Co.

Automatic Warp Tying Machines.
Barber-Colman Company.

Bale Ties.
Acme Steel Goods Co.
DeHaven Manufacturing Co.

Baling Presses.
Minnich Machine Works.
Sullivan Machinery Co.

Bandings.
——See under Yarns.

Baskets.
Lane, W. T., & Bro.

Belting.
Candy Belting Co.
Shultz Belting Co.
——See also Mill Supplies.

Belt Dressing.
Cling Surface Mfg. Co.
Dixon, Jas., Crucible Co.
Shultz Belting Co.
Stephenson Mfg. Co.

Belt Lacing Machines.
Birdsboro Steel Foundry & Machine Co.

Bias Machines.
Adams, A. L.

Bindings.
——See Tapes and Braids.

Bleaching Kiers.
Arlington Mch. Wks. (Arthur Birch, prop.)
Philadelphia Drying Machinery Co.
Textile Finishing Machinery Co.

Bleaching Materials.
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Blowers and Blower Systems.
American Blower Co.
Buffalo Forge Co.
Dean Bros. Steam Pump Works.
Mass. Fan Co.
Philadelphia Drying Machinery Co.
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Bobbins, Spools, Shuttles, Etc.
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American Textile Specialty Mchy. Co.
Cell Drier Machine Co.
Leigh, Evan A.
Lestershire Spool & Bobbin Co.
Rhode Island Fiber Spool Co.
Tebbets, E. L., & Co.
Wilson & Co.

Bobbin Winders.
Universal Winding Co.

Boiler Inspection and Insurance.
——See Steam Boiler Insurance.

Boilers.
——See Steam Boilers.

Boxes, Cloth Boards, Etc.
Pearson, J. T.

Box Strapping.
Acme Steel Goods Co.
De Haven Mfg. Co.

Braiding Machinery.
New England Butt Co.
Textile Machine Works.

Braids.
——See Tapes, Braids and Edgings.

Brass Hinges.
Root, C. J., Co.

Brazing.
American Ferrofix Brazing Co.

Bridges.
Scaife, W. B., & Sons.

Brushers.
——See Napping Machines.

Brushes.
Felton, S. A., & Son Co.
Mason Brush Works.

Burr Pickers.
Curtis & Marble Machine Co.
Sargent's, C. G., Sons.
Smith & Furbush Machine Co.

Calico Printers' Machinery and Supplies.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Taunton-New Bedford Copper Co.
Textile Finishing Mchy. Co.
——See also Dyeing, Bleaching, Machinery, etc.

Canvas Baskets.
Lane, W. T., & Bro.

Caps.
Calder Machine Works.

Carbonizing Machinery.
American Drying Machinery Co.
Birch Bros., Somerville Machine Wks.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Tolhurst Machine Works.

Card Clothing.
Ashworth Bros.
Leigh, Evan A.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.

Card Cutting.
Vial, Pierre.

Carded Cotton.
Blaisdell, S., Jr., Company.

Card Feeds.
——See Automatic Feeds.

Card Grinding Machinery.
Entwistle, T. C., Co.
Leigh, Evan A.
Riley, C. E., Company.
Smith & Furbush Machine Co.
Stoddard, Haserick, Richards & Co.

Carders' Tools.
Brown, Wm. H., Co.

Carpet Machinery.
Altemus, Jacob K.
Curtis & Marble Machine Co.
Philadelphia Textile Machinery Co.
Smith & Furbush Machine Co.

Casting Repairs.
American Ferrofix Brazing Co.

Castings.
Farrel Foundry and Machine Co.
Schofield, Wm., Co.

Cell Driers.
Cell Drier Machine Co.

Cement Pans.
Scaife, W. B., & Sons.

Chemicals.
Harding & Fancourt.
Roessler & Hasslacher Chemical Co.

Chemists.
Little, Arthur D.

Cling Surface.
Cling Surface Mfg. Co.

Clocks.
Pettes & Randall Co.

Cloth Boards.
Chaffee Bros.
Pearson, J. T.
Richardson Brothers.

Cloth Cutting Machinery.
Cameron Machine Co.

Cloth Stretchers.
Arlington Mch. Wks. (Arthur Birch, prop.)
Leyland, Thomas, & Co.
Textile Finishing Machinery Co.

Clutches.
American Tool & Machine Co.
Hunter, James, Machine Co.

Combs (Wool and Cotton).
Hood, R. H.
Jefferson, Edward & Brother.
Leigh, Evan A.
Philadelphia Textile Machinery Co.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.

Concrete Work and Construction.
Gilbreth, Frank B.
Simpson Bros. Corporation.

Condensers.
Dean Bros. Steam Pump Works.

Conditioning of Textile Fabrics.
New York Silk Conditioning Works.

Consulting Electrical Engineer.
Puffer, William L.

Conveying Systems.
Buffalo Forge Co.
Sturtevant, B. F., Co.

Cop Spindles.
American Textile Specialty Mchy. Co.

Cop Tubes.
American Textile Specialty Mchy. Co.
——See Paper Tubes.

Copper Print Rollers.
Taunton-New Bedford Copper Co.

Coppersmiths.
Badger, E. B., & Sons Co.

Copper Work for Dyers.
Butterworth, H. W., & Sons Co.
Textile Finishing Machinery Co.

Cork Inserts.
National Brake & Clutch Co.

Corrugated Iron and Steel.
Scaife, W. B., & Sons.

Cost and Accounting Systems.
Wright, R. A.

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American Cost Accounting Co.

Cotton.
Blaisdell, S., Jr., Co.
Charles, W. B.
Riley, C. E., Company.
Stoddard, Haserick, Richards Co.
Tolar & Hart.

Cotton Machinery.
Altemus, Jacob K.
American Textile Appliances Co.
American Textile Specialty Mchy. Co.
American Drying Machinery Co.
Ashworth Bros.
Brockway & Meckenstrum.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Cramer, Stuart W.
Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Draper Company.
Easton-Burnham Co.
Elliott & Hall.
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Firth, William, Co.
Hetherington, John, & Sons, Ltd.
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Kilburn, Lincoln & Co.
Kip-Armstrong Co.
Kitson Machine Co.
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Mason Machine Works.
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Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
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Riley, C. E., Company.
Saco & Pettee Machine Shops.
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Smith & Furbush Machine Co.
Stafford, G. W., Mfg. Co.
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Textile Machinery Co.
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Woonsocket Machine & Press Co.

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Kitson Machine Co.
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Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.

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Bosson & Lane.
Burckhardt & Co.
Danker & Marston.
Harding & Fancourt.
Nicetown Mfg. Co.

Cotton Waste.
Blaisdell, S., Jr., Co.
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Schofield, Edwin F.

Crayons.
Dixon, Jos., Crucible Co.
Lowell Crayon Co.

Cutting Machines.
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Cameron Machine Co.

Cylinder Oil (Superheated Steam).
Power Specialty Co.

Dextrine.
Stein, Hirsh & Co.

Dobbies.
Crompton & Knowles Loom Works.
Kilburn, Lincoln & Co.
Stafford, G. W., Mfg. Co.

Draughtsmen.
Cameron Machine Co.

Drawing Rolls.
Hood, R. H.
Jefferson, Edward & Brother.
Metallic Drawing Roll Co., The.

Drying Machinery.
American Blower Co.
American Drying Machinery Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Buffalo Forge Co.
Butterworth, H. W., & Sons Co.
Cell Drier Machine Co.
Hunter, Jas., Machine Co.
Jefferson, Edward & Brother.
Kenyon, D. R., & Son.
Mass. Fan Co.
Philadelphia Drying Machinery Co.
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Sturtevant, B. F., Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Drying Boards.
Bull, William C.
Pearson, J. T.

Dusters.
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Dust Collectors.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Dyers, Bleachers and Finishers.
Brophy's, T., Sons.
Davidson, J. F.
Firth & Foster Co.
Germania Dye Works.
Globe Dye Works Co.
Home Bleach & Dye Works.
Lorimer's, The Wm. H., & Sons Co.
Pawtucket Dyeing & Bleaching Co.
Peerless Co.
Rowland, Samuel.
Solway Dyeing & Textile Co.
Western Thread & Dye Works.

Dyeing, Drying, Bleaching and Finishing Machinery.
Allen, William, Sons Co.
American Blower Co.
American Drying Machinery Co.
Arlington Mch. Wks. (Arthur Birch, prop.)
Birch, Arthur, Arlington Mch. Wks.
Birch Bros., Somerville Machine Wks.
Buffalo Forge Co.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Cell Drier Machine Co.
Curtis & Marble Machine Co.
Entwistle, T. C., Co.
Gessner, David.
Heathcote, John, & Son.
Hopkins Machine Works.
Hunt, Rodney, Machine Company.
Hunter, James, Machine Co.
Kenyon, D. R., & Son.
Klauder-Weldon Dyeing Machine Co.
Klipstein, A., & Co.
Leigh, Evan A.
Leyland, Thos., & Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Smith, Drum & Co.
Sturtevant, B. F., Co. (Drying).
Textile Finishing Machinery Co.
Tolhurst Machine Works.
Vacuum Dyeing Machine Co.

Dye House Cans.
Hill, James, Mfg. Co.

Dye House Floors.
Simpson Bros. Corporation.

Dye House Trucks.
Bailey, Frank.

Dye Sticks.
Bailey, Frank.
Haedrich, E. M.

Dye Tubs.
——See Tanks, Tubs and Vats.

Dyestuffs and Chemicals.
American Dyewood Co.
Atteaux, F. E., & Co.
Badische Co.
Berlin Aniline Works.
Bischoff & Co.
Bosson & Lane.
Cassella Color Co.
Chemische Aniline Works.
Danker & Marston.
Kalle & Co.
Ford, J. B., Co.
Geisenheimer & Co.
Johnson, Chas. A., & Co.
Klipstein, A., & Co.
Leyland, Thos., & Co.
Metz, H. A., & Co.
Roessler & Hasslacher Chemical Co.
Sykes, Walter F., & Co.
Thayer, Ed. M., & Co.

Dynamos.
——See Electric Lighting.

Edgings.
——See Tapes, Braids and Edgings.

Electrical Construction.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Company.
Westinghouse Electric & Mfg. Co.

Electrical Engineer (Consulting.)
Puffer, William L.

Electrical Heating Devices.
Crocker-Wheeler Co.

Electrical Supplies.
Pettingell-Andrews Co.

Electric Driven Pumps.
Dean Bros. Steam Pump Works.

Electric Fans.
American Blower Co.
Buffalo Forge Co.
Crocker-Wheeler Co.
General Electric Co.
Mass. Fan Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Hoists.
Crocker-Wheeler Co.

Electric Lamps.
Pettingell-Andrews Co.

Electric Lighting.
Buffalo Forge Co.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Motors.
——See Motors (Electric).

Elevators.
Salem Elevator Works.

Embossing Machines.
Cameron Machine Co.

Employees' Time Recorders.
Pettes & Randall Co.

Engine Repairs.
Fishkill Landing Machine Co.

Exhaust Heads.
Buffalo Forge Co.
Sturtevant, B. F., Co.

Expansion Joints.
Power Specialty Co.

Fans—Exhaust and Ventilating.
——See Ventilating Apparatus.

Feed Water Heaters.
Scaife, W. B., & Sons.

Feed Water Pumps.
Dean Bros. Steam Pump Works.
Goulds Mfg. Co.

Feed Water Purifiers.
American Water Softener Co.
Dodge Mfg. Co.
Philadelphia Water Purification Co.
Scaife, W. B., & Sons.

Feeds.
——See Automatic Feeds.

Felt Hardeners.
Farrel Foundry and Machine Co.

Felting Machinery.
Farrel Foundry and Machine Co.

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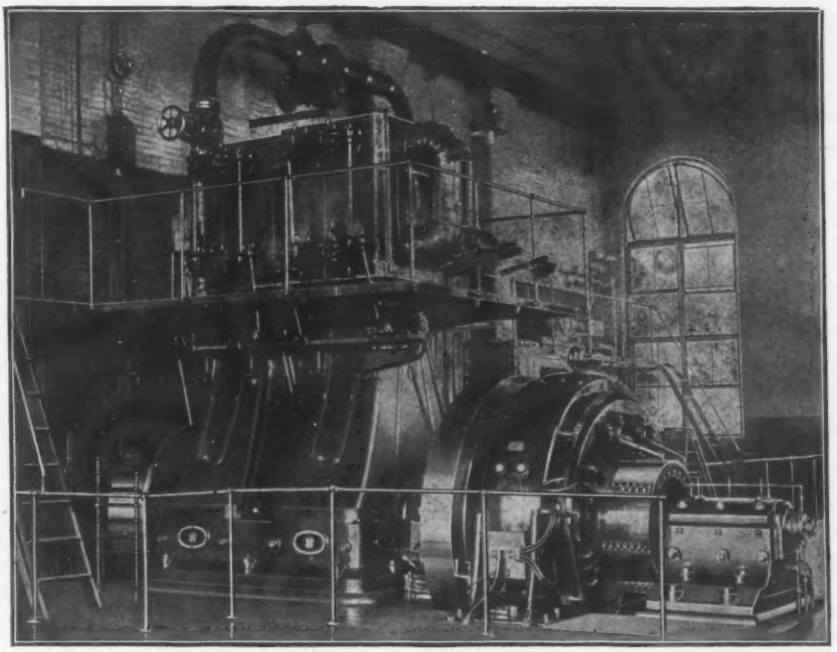


This 250 k. w. Sturtevant Generating Set

is but one of a complete line of 40 standard sizes ranging from 3 k. w. to 500 k. w., with vertical horizontal and vertical-compound engines. They require the minimum of attention. All engine bearings are mechanically fed with oil, the running gear is entirely enclosed. The generators are built for endurance.

Bulletins No. 142 and 143 describe them.

B. F. STURTEVANT CO., BOSTON, MASS.

General Office and Works, Hyde Park, Mass.

NEW YORK PHILADELPHIA CHICAGO CINCINNATI LONDON

Designers and Builders of Heating, Ventilating, Drying and Mechanical Draft Apparatus; Fan Blowers and Exhausters; Rotary Blowers and Exhausters; Steam Engines, Steam Turbines, Electric Motors and Generating Sets; Dust Collectors, Fuel Economizers, Forges, Exhaust Heads, Steam Traps, etc. 592

Fibre Spools.
Cell Drier Machine Co.
Rhode Island Fibre Spool Co.

Filters.
American Water Softener Co.
Hungerford & Terry.
Norwood Engineering Co.
Phila. Water Purification Co., The.
Scaife, W. B., & Sons.

Finishing Machinery.
—See Dyeing, Drying, Bleaching and Finishing.

Fire Brick.
Borgner, Cyrus, Co.

Fire Extinguishers.
Badger, E. B., & Sons Co.

Fire Hose.
Eureka Fire Hose Co.

Fire Hydrants.
Norwood Engineering Co.

Fire Insurance.
Home Insurance Co.

Fire Proof Doors and Windows.
Badger, E. B., & Sons Co.

Flax, Tow, Hemp and Jute Machinery.
Fairbairn-Lawson-Combes-Barbour, Ltd.

Fluted Rolls.
Hood, R. H.
Leigh, Evan A.
Jefferson, Edward & Brother.
Riley, C. E., Company.
Thurston, A. G., & Son.

Flyers.
Bodden, Wm., & Son, Ltd.
Calder Machine Works.
Hopkins Machine Works.
Jefferson, Edward & Brother.
Leigh, Evan A.
Textile Machinery Co.

Forges.
Sturtevant, B. F., Co.

Forwarders.
Salvator Transfer, Inc.

Friction Clutches.
—See Clutches.

Friction Cones.
Evans, G. Frank.

Friction Rings (Cork Insert).
National Brake & Clutch Co.

Fuel Economizers.
Buffalo Forge Co.
Sturtevant, B. F., Co.

Fulling Mills for Woolen Goods.
Hunt, Rodney, Machine Co.
Hopkins Machine Works.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.

Furnaces (Automatic Smokeless).
Murphy Iron Works.

Garnetts.
Leigh, Evan A.
Smith & Furbush Machine Co.

Gas Blowers and Exhausters.
Sturtevant, B. F., Co.

Gas Engines.
Jones, Lewis.

Gaskets (Superheated Steam).
Power Specialty Co.

Gassing Machines.
Stubbs, Joseph.

Gauges.
Crosby Steam Gage & Valve Co.
Walworth Manufacturing Co.

Gears.
Farrel Foundry and Machine Co.
New Process Raw Hide Co.

Gear Cutting.
Farrel Foundry and Machine Co.

Gear Cutting Machine.
Whiton, The D. E., Co.

Generating Sets.
Buffalo Forge Co.
Crocker-Wheeler Co.
Sturtevant, B. F., Co.

Geyser Water Heater.
Sargent's Sons, C. G., Corp.

Heating.
—See Ventilating Apparatus.

Heddles.
Stoddard, Haserick, Richards & Co.

Hoisting Apparatus.
Economy Engineering Co.

Hosiery Boards.
Pearson, J. T.

Hosiery Labels.
Kaumagraph Company.

Humidifying Apparatus.
American Moistening Co.
Buffalo Forge Co.
Cramer, Stuart W.
Parks, G. M., Co.

Hydraulic Rams.
Power Specialty Co.
Walworth Mfg. Co.

Hydro Extractors.
American Tool & Machine Co.
Broadbent, Thomas, & Sons.
Hunt, Rodney, Machine Company.
Riley, C. E., Company.
Stoddard, Haserick, Richards & Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Illuminating Engineer.
Puffer, William L.

Insulating and Braiding Silks.
Sauquoit Silk Mfg. Co.

Insurance (Casualty, Fire and for Loss of Profits.)
Home Insurance Co.

Investments.
Cross Creek Coal Co.

Invoices Discounted.
Cathrall, W. M.

Iron Glue.
Ament, H. B.

Jacquards.
Halton's, Thomas, Sons.

Knit Goods, Edgings, Trimmings, Etc.
Chapin, Geo. W.
Charles, W. B.
Cheney Bros.
Friedberger-Aaron Mfg. Co.
Krout & Fite Mfg. Co.
Weimar Bros.

Knit Goods, Finishing Machines Crochet, Etc.
Hunt, Rodney, Machine Company.
Merrow Machine Co., The.
Nye & Tredick Co.
Robinhold Machine Co.
Scott & Williams.
Union Special Machine Co.
Willcox & Gibbs Sewing Machine Co.

Knitting Machine Cylinders.
Paxton & O'Neill.
Stafford & Holt.

Knitting Machinery.
Boss Knitting Machine Co.
Brinton, H., & Co.
Claes & Fientje.
Cooper, Chas.
Crane Mfg. Co.
Excelsior Knitting Machine Mfg. Co.
Gormly, Robt. W., & Co.
Grosser Knitting Machine Co.
Hemphill Mfg. Co.
Jenckes, E., Mfg. Co.
Jones, Lewis.
Lamb Knitting Mach. Mfg. Co.
Leighton Machine Co.
Mayo, Geo. D., Knitting Machine Co.
Mayo Knitting Machine & Needle Co.
National Automatic Knitter Co.
Nye & Tredick Co.
Paxton & O'Neill.
Ruth Machine Co.
Scott & Williams.
Stafford & Holt.
Standard Machine Co.
Taylor, James.
Tompkins Bros. Co.
Walter & Co.
Walther, Otto.
Wildman Mfg. Co.

Knitting Needles and Supplies.
Breedon's, Wm., Son.
Brinton, H., & Co.
Continental Latch Needle Company.
Cooper, Chas.
Corey, Wm., Co.
Crane Mfg. Co.
Dodge Needle Co.
Excelsior Needle Co.
Grosser Knitting Machine Co.
Ives, L. T., Co.
Lamb Knitting Machine Mfg. Co.
Keystone Latch Needle Co.
Mayo Knitting Machine & Needle Co.
Page Needle Co.
Ruth Machine Co.
Wardwell Needle Co.

Lamps, Incandescent.
General Electric Co.
Pettingell-Andrews Co.
Westinghouse Electric & Mfg. Co.

Loom Pickers.
Garland Mfg. Co.

Looms.
Crompton & Knowles Loom Works.
Draper Company.
Kilburn, Lincoln & Co.
Leigh, Evan A.
Lowell Machine Shop.
Mason Machine Works.
Stafford, Geo. W., Co.
Stoddard, Haserick, Richards & Co.
Whitin Machine Works.

Loopers.
Beattie Machine Works.
Hepworth, John W., & Co.
Leighton Machine Co.

Lubricants.
Borne, Scrymser Co.
Dixon, Jos., Crucible Co.

Lubrication Engineer.
Davis, Wm. M.

Lubricators.
Detroit Lubricator Co.
Walworth Mfg. Co.

Lumpers.
Gerry, George, & Son.
Schofield, Wm., Co.

Machine Designers.
Adams, A. L.
Cameron Machine Co.

Machinery Dealers.
Jefferson, Ed., & Bro.
Lamb, J. K., Textile Mach. Co.
Schofield, Geo. L.
Taylor, James.

Machinists.
Adams, A. L.
Calder Machine Works.
Cameron Machine Co.

Machinists' Tools.
Whitin, The D. E., Co.

Mails.
Walder, J.

Marking Brushes.
Universal Fountain Brush Co.

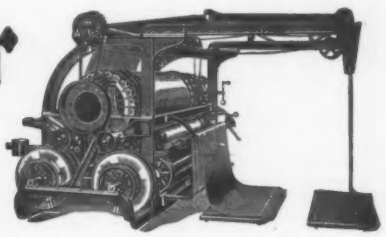
Measuring and Folding Machines.
Adams, A. L.
Curtis & Marble Machine Co.
Elliott & Hall.
Root, C. J., Co.

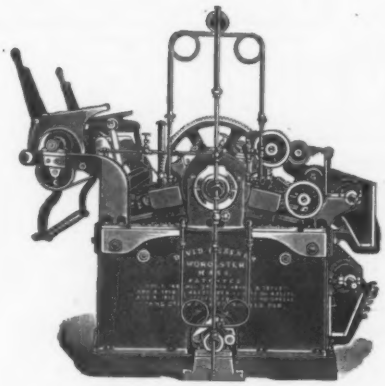
Mechanical Draft.
American Blower Co.
Buffalo Forge Co.
Massachusetts Fan Co.

Alphabetical Advertising Index, with page numbers, follows this list.

David Gessner

Worcester, Mass.

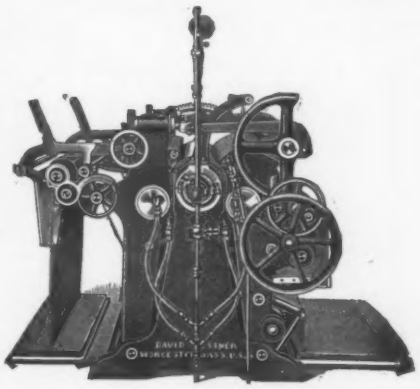




Latest Improved Cloth Finishing Machinery

—

Napping Machines and Presses a Specialty



"O.K." PEERLESS INCANDESCENT LAMPS

Our "O.K." Peerless Lamps are without exception the best lamps for Mill Lighting. We know that if you give them a trial you will be more than satisfied.

We want your contract, and should be pleased to have our lamp expert call on you, and ascertain just what type of lamp is best adapted to your purpose.

Pettingell-Andrews Company,

BOSTON, - - - - - - - - MASS.

Mechanical Draughtsmen.
Sturtevant, B. F., Co.
Cameron Machine Co.

Mechanical Engineers.
American Blower Co.
Buffalo Forge Co.
Gilbreth, Frank B.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Mechanical Stokers.
Murphy Iron Works.

Mercerizers.
Globe Dye Works Co.
Home Bleach & Dye Works.
Lorrimer, Wm. H., Sons Co.

Mercerizing Machinery.
Buhlmann, A. W.
Butterworth, H. W., & Sons.
Klauder-Weldon Dyeing Machine Co
Smith, Drum & Co.
Textile Finishing Machinery Co.

Metallic Fire-proof Window Frames and Sashes.
Badger, E. B., & Sons Co.

Metallic Packing.
Power Specialty Co.

Mill Architects.
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Mill Builders and Engineers.
Ferguson, John W.

Mill Supplies.
American Supply Co.
Bamford & Smith.
Buckley's, Benjamin, Sons.
Crosby Steam Gage and Valve Co.
Easton-Burnham Co.
Eureka Fire Hose Co.
Garland Mfg. Co.
Jefferson, Ed., & Bro.
Lane, W. T., & Bro.
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Murphy, E. W., & Co.
Philadelphia Drying Machinery Co.
Pratt, R. C.
Riley, C. E., Company.
Richardson Bros.
Shaw, Victor, Ring Traveler Co.
Stephenson Mfg. Co.
Stoddard, Haserick, Richards & Co.
Thurston, A. G., & Son.
Vandegrift, Elias T.
Walworth Manufacturing Co.

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Buffalo Forge Co.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

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Birch Bros., Somerville Machine Wks.
Buhlmann, A. W.
Curtis & Marble Machine Co.
Gessner, David.
Jones, Lewis.
Leigh, Evan A.

Noils (Silk).
Malcolm Mills Co.
Ryle, Wm., & Co.

Oil Cups.
Walworth Manufacturing Co.

Oils.
Borne, Scrymser Co.
Eurekhardt & Co.
Harding & Fancourt.
Murphy, E. W., & Co.
New York & New Jersey Lubricant Co.
Stephenson Mfg. Co.

Overseaming Machines.
Merrow Machine Co.
Willcox & Gibbs Sewing Machine Co.

Packings (Metallic).
Power Specialty Co.

Paints (Wood Preserving).
Carbolineum Co.

Pantagraphs for Mill Engraving.
Johnson, C. A., & Co.

Paper.
Merwin Paper Co.
Richardson Bros.

Paper Boards.
Merwin Paper Co.

Patent Solicitors.
Crosby & Gregory.
Howson & Howson.
Industrial Law League Inc.

Perforated Metals.
Hopkins Machine Works.

Peroxide of Sodium.
Roessler & Hasslacher Chemical Co.

Pipes and Fittings.
Scaife, W. B., & Sons.
Walworth Manufacturing Co.

Pneumatic Conveying.
—See Ventilating.

Portable Hoists.
Economy Engineering Co.

Power Transmission Machinery.
Almond, T. W., Mfg. Co.
American Drying Machinery Co.
American Mfg. Co.
American Pulley Co.
Cell Drier Machine Co.
Cresson, Geo. V., Company.
Evans, G. Frank.
Farrel Foundry and Machine Co.
Hunt, Rodney, Machine Company.
Hunter, Jas., Machine Co.
Kilburn, Lincoln & Co.
Philadelphia Drying Machinery Co.
Plymouth Cordage Co.
Reeves Pulley Co.
Saginaw Manufacturing Co.
Schofield, Wm., Co.
Sellers, William, & Co.
Textile Finishing Machinery Co.
Tolhurst Machine Works.

Preparatory Machinery (Cotton).
Howard & Bullough Am. Machine Co.
Kitson Machine Co.
Leigh, Evan A.
Riley, C. E., Company.
Saco & Pettee Machine Shops.

Presses.
Boomer & Boschert Press Co.
Butterworth, H. W., & Sons Co.
Curtis & Marble Machine Co.
Gessner, David.
Hart, Charles.
Minnich Machine Works.
Phila. Drying Machinery Co.
Spence & Rideout.
Sullivan Machinery Co.
Textile Finishing Machinery Co.
Woonsocket Machine & Press Co.

Press Papers.
Merwin Paper Co.
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Situations Wanted.

The following advertisements are a portion of those of superintendents and overseers, of whom full particulars are on file at this office. Manufactu ers who may be in need of such men may address them in care of Textile World Record, Boston or state their requirements directly, and the addresses of suitable men will be furnished without charge.

Mr. C. T. Donlevy, a practical mill overseer and superintendent, who has a wide acquaintance with mill men, gives special attention to this department. He would be pleased to hear from any of his friends who may be interested. Address Textile World Record, 144 Congress St., Boston, Mass.

COTTON SUPERINTENDENTS.

Assistant Superintendent in a cotton mill or position as overseer of carding or spinning. Worked on all kinds of cotton goods, wool mixes, ginghams, tickings, denims, linings, etc. Familiar with all makes of cotton machinery. Has had a number of years experience in different departments in mills, machine shops, engineering, weaving, carding and spinning. Good reference. Will go any place for a good position. 4609, Textile World Record, Boston, Mass.

Superintendent of a Cotton Mill. Worked on drills, ducks, sateens, lenos, American, Sea Island and Egyptian cottons. Familiar with all makes of American and English machinery. 40 years of age, married. Good reference. 4597, Textile World Record, Boston, Mass.

Agent or Superintendent of a cotton mill. Worked on all classes of cotton goods, white and colored, plain and fancy. Familiar with all makes of cotton machinery used in the above goods. Prefers New England or New York State. 45 years of age, married. Good reference. 4603, Textile World Record, Boston, Mass.

Superintendent of Cotton Mill, or overseer of cotton weaving. Position wanted by a man 38 years of age, married, American. Worked on shirtings, sateens, dress goods, satin and Marseilles quilts. Familiar with Crompton, Knowles, Whitin and English looms; Lowell frames; Saco & Pettee cards. Good references. 4031 Textile World Record.

Superintendent or Assistant Superintendent of a cotton mill. 44 years of age, married. Has worked on ginghams, shirtings, fancy dress goods, turkey red, damask, cotton warp and fancy yarns for woolen mills. 23 years of practical experience and is familiar with all kinds of machinery used in the manufacture of the above goods. Will not go West or South. Good reference. 4501, Textile World Record, Boston.

Superintendent of a Cotton, Cloth or Yarn Mill. Position wanted by a man, 39 years of age, American, married. Is familiar with cotton hosiery and warp yarns, single or two-ply. Is at present employed as superintendent of a cotton yarn mill, but wishes to change for advancement. Strictly temperate and industrious and can furnish the very best of references. 3853, Textile World Record, Boston.

Superintendent or Assistant in a cotton mill. Position wanted by a man 45 years of age, married. Familiar with all kinds of cotton goods and cotton machinery. Good references. Will not go West, South or Canada. 3949, Textile World Record.

Agent or Superintendent of a cotton mill. Position wanted by a man, 40 years of age, American, married. Familiar with fancy, colored and plain goods of all kinds. Familiar with all kinds of cotton machinery. Has been overseer for a number of years in first class mill. Could take a position at short notice. Good reference. 3814, Textile World Record, Boston, Mass.

Superintendent or Agent of Cotton Mill. Position wanted by a man 43 years of age, married, American. Has worked on all kinds of cotton and worsted goods, and is familiar with Draper, Crompton & Knowles, Lowell, Whitin, Mason, Kilbourn and Lincoln looms. Good references. 3669, Textile World Record, Boston, Mass.

Superintendent, Assistant Superintendent and Designer, or overseer of weaving and finishing. Position wanted by a man 33 years of age, American. Is experienced on ginghams, madras, shirtings, linings, lawns, silks and ducks. Is familiar with all kinds of cotton machinery. Good references. 3616, Textile World Record, Boston, Mass.

WOOLEN SUPERINTENDENTS.

Superintendent of a Woolen, cloth or yarn mill. Might consider a good position as overseer of carding. Worked on all kinds of woolen goods, yarns made from wool, cotton and shoddy mixes. Understands all makes of carding machinery. 44 years of age, married. Good reference. 4613, Textie World Record, Boston, Mass.

Superintendent, Assistant Superintendent and designer in a woolen or worsted mill. Familiar with all kinds of woolen and worsted goods, dress goods, broadcloths, beavers, coverts, etc., and all makes of machinery. Will go any place for a good position. Good reference. 4605, Textile World Record, Boston, Mass.

Superintendent or Assistant of a woolen or worsted yarn mill. Worked on fancy and piece dye worsteds, men's wear, thibets and overcoatings. Has a good knowledge of blending stock, also a good knowledge of designing. Familiar with all makes of woolen and worsted machinery, American and foreign. 26 years of age, married. Good reference. 4593, Textile World Record, Boston, Mass.

Superintendent of a Woolen Yarn Mill. Familiar with all kinds of yarn, wool, shoddy and cotton mixes. Good knowledge of buying stock and experienced in dyeing yarns in stock. 33 years of age, Scotch. Good reference. 4604, Textile World Record, Boston, Mass.

Supt. or Asst. Supt. Position wanted by a man 45 years of age, married and American. Has worked on cassimeres, wool and cotton worsteds, kerseys, cloakings, meltons and cheviots. Is familiar with all kinds of woolen machinery. Good references. 3623. Textile World Record.

Superintendent or Manager of Woolen Mill. Position wanted by a man 47 years of age, married, Scotch. Is experienced on worsteds, fancy cassimeres, homespuns, meltons, thibets, kerseys, overcoatings, cheviots and dress goods. Is familiar with all kinds of woolen machinery. Good references. 3619. Textile World Record, Boston, Mass.

Woolen Superintendent or designer. Familiar with all kinds of fancy worsteds, dress goods, men's wear, fancy cotton dress goods. Familiar with all kinds of American and English machinery. First-class references. English; age 40. Address 3111, Textile World Record.

Assistant Superintendent and Assistant Designer. Position wanted by a man 27 years of age, German. Has worked on fancy cassimeres, overcoatings and dress goods. Is familiar with Crompton & Knowles looms. Good references. 3681, Textile World Record, Boston, Mass.

Assistant Superintendent, or Assistant Designer in a large woolen mill, or Assistant Superintendent and Designer in a medium sized woolen mill. Position wanted by a man 38 years of age, American, single. Worked on tourists' coatings, shirtings, dress goods, broadcloths, kerseys, etc. Good references. 4034, Textile World Record, Boston.

Assistant Superintendent or assistant designer in a worsted or woolen mill. Position wanted by a man 32 years of age, single, American. Has worked on fine worsted and woolens, worsted and wool overcoatings, low grade worsted and woolens, men's wear and dress goods. Familiar with American and English machinery. Good reference. 3839, Textile World Record, Boston, Mass.

Superintendent or assistant superintendent in a woolen mill. Position wanted by a man, 30 years of age, American, married. Familiar with all kinds of woolen and worsted goods, also yarn production from fine to low grades. Also familiar with French system of worsted yarn manufacturing. Good reference. 3795, Textile World Record, Boston, Mass.

SUPERINTENDENTS.

Superintendent of cotton or woolen yarn mill or shoddy plant. Position wanted by a man 50 years of age, who has had a wide experience in the manufacture of yarns. Understands all makes of cotton and woolen machinery, also held position as superintendent in large knitting mills, and is familiar with the American makes of knitting machines. First-class recommendations. 3249, Textile World Record, Boston, Mass.

Manager, Agent, Supt. or Supt. and Designer. Position wanted by a man 57 years of age, English, married, has worked on all classes of woolen and worsted goods, in fancy and piece dyes, from the finest to the coarsest goods. Familiar with all kinds of machinery, has exceptionally good reference, could take a position at once. 3705, Textile World Record.

Supt., Asst. Supt., or Overseer of Carding. Position wanted by a man 39 years of age, married, American. Is experienced on all kinds of cotton colored goods, long or short stock, also on bleached stock. Is familiar with Colvin, Whitin and Crompton looms, and all makes of carding and spinning machinery. Good references. 3585, Textile World Record.

Superintendent, assistant superintendent or assistant designer. Position wanted by a man 28 years of age, married, and American. Is experienced on all classes of woolen goods, and is familiar with Crompton & Knowles looms. Good references. 3691, Textile World Record, Boston, Mass.

Superintendent or overseer of carding in a large mill. Worked on sheetings, ginghams. Will not go West. Familiar with all kinds of cotton machinery. 41 years of age; American; first-class references. 2021, Textile World Record.

Worsted Superintendent or overseer of combing, spinning and twisting. Worked on mohair, alpaca, all foreign and domestic wools. Familiar with all kinds of machinery; first-class references. Age 45, married. 3248, Textile World Record.

Superintendent or Assistant Superintendent, or first-class boss weaving position. Position wanted by a man 40 years of age, married. Worked on all kinds of fancy worsteds and woolens. Familiar with all up-to-date machinery. Good references. 3996 Textile World Record.

Superintendent or Assistant Superintendent, boss weaver or designer in a silk mill. Has worked on silk ties, dress goods, fancy vestings and mohair linings. Is familiar with Crompton & Knowles looms. Would prefer New York or New Jersey states, but would accept a good position anywhere. Good reference. 4518, Textile World Record, Boston, Mass.

Manager of a Hosiery Mill. Familiar with woolen, worsted and cotton and full-fashioned seamless hosiery. 45 years old, American. First-class references. 1657, Textile World Record, Boston, Mass.

Agent, or Supt. and Designer. Position wanted by a man 40 years of age, married and American. Is experienced on fancy worsteds, woolen kerseys, thibets, overcoatings and dress goods. Is familiar with all kinds of woolen machinery. Good references. 3574, Textile World Record.

Superintendent or Manager of Hosiery Mill. Position wanted by a man 37 years of age, married, American. Is experienced on woolen, worsted and cotton hosiery. Is familiar with all makes of knitting machinery, but prefers the Mayo, Acme or Standard. First-class references. 3650, Textile World Record, Boston, Mass.

Manager, Superintendent, Buyer or cost accountant in a cotton mill. Position wanted by a man 30 years of age, American, single. Has had a practical training in the manufacturing of cotton goods. Good reference. 3534, Textile World Record, Boston, Mass.

Assistant Superintendent in a woolen mill or an office position wanted by a man 31 years of age, single. Has had experience on low grade kerseys, cheviots, broad cloths, meltons and fancy cassimeres. Would prefer a position in New England and would work for reasonable wages if there was a chance for advancement. Good reference. 4543, Textile World Record, Boston, Mass.

SUPERINTENDENTS AND DESIGNERS.

Superintendent and Designer in a woolen or worsted mill. Worked on all kinds of men's and women's wear, worsted, wool, shoddy and cotton mixes and piece dyes. Familiar with all kinds of woolen machinery. 43 years of age, married. Good reference. 4619, Textile World Record, Boston, Mass.

Superintendent and Designer or assistant superintendent and designer in a woolen mill. Position wanted by a man 29 years of age, American, married. Worked on all grades of woolen goods, both wool and worsted, also blankets. Familiar with all kinds of machinery. Will go any place for a good position. 3838, Textile World Record, Boston, Mass.

Superintendent and Designer in a woolen mill. Position wanted by a man, 30 years of age, single, Scotch. Has worked on all kinds of men's wear, wool and worsted, plain and fancy, also dress goods. Familiar with all kinds of machinery. Will go any place for a good position. First class references. 3749, Textile World Record, Boston, Mass.

Superintendent and Designer. Position by a man who has had a number of years of experience in good mills on men's wear, dress goods of all descriptions, worsteds, wool, cotton and silk. 35 years of age. American, married. 3453, Textile World Record, Boston.

Superintendent and Designer or boss weaver in a woolen mill. 48 years of age, married, American. Has had several years of experience on fancy cassimeres, kerseys, meltons and dress goods. Could take a position at once. 4537, Textile World Record, Boston, Mass.

Assistant Superintendent and Designer in a woolen mill. Englishman, 37 years of age, single. Has worked on all kinds of fancy and plain worsted and woolen goods, both high and low grade; serges, venetians, tennis goods, cheviots, cassimeres, suitings, shirtings and indigos. Understands all makes of machinery. Will not go South or Canada. Could take a position at once. Good reference. 4095, Textile World Record, Boston, Mass.

Designer or Superintendent. 31 years of age, English. Worked on all kinds of woolen and worsted men's and women's wear. Familiar with the English and American looms. Good reference. 4556, Textile World Record, Boston, Mass.

DESIGNERS.

Designer in Worsted or woolen mill. Worked on woolen and worsted goods of all kinds. Good reference. Will go any place for a position. 26 years of age, single, German. 4601, Textile World Record, Boston, Mass.

Designer in a Woolen or worsted mill. Position wanted by a married man, 35 years of age, English. Worked on men's suitings, trouserings, rain cloths and ladies' dress goods. Familiar with the English, Crompton & Knowles looms. Will not go to Canada. Good reference. 4552, Textile World Record, Boston, Mass.

Designer on Jacquard Work. 36 years of age, married. Worked on brocades, fancy stripes, silk, worsted and cotton goods. Could take a position at once. Will not go West, South, or Canada. 4535, Textile World Record, Boston, Mass.

Assistant Designer or assistant chemist in a silk or cotton mill. 22 years of age, a graduate of a textile school. Has never held a responsible position in this country. Would accept reasonable wages in order to get a start. Has a diploma from school. 4542, Textile World Record, Boston, Mass.

Assistant Designer. 27 years of age. Worked on suitings, cassimeres, overcoatings, etc. Familiar with Knowles looms. Wants a position in the N. E. States. Good reference. 4536, Textile World Record, Boston, Mass.

Designer, assistant designer or assistant superintendent. German. Woolen and worsted men's wear and ladies' dress goods. Experienced in Germany and a short time in this country. 3166, Textile World Record.

Assistant Designer in woolen mill. Position wanted by a man 21 years of age, American, single. Worked on woolen and worsted goods. Good references. Wants New England States only. 3976 Textile World Record.

KNITTERS.

Overseer of Knitting in a small or second hand in a large knitting mill, on all makes of underwear. Familiar with the Wildman, Stafford & Holt, Campbell and more particularly Crane circular machines. 22 years of age, single. Good reference. 4619, Textile World Record, Boston, Mass.

Overseer of Knitting on spring or latch needle machines. Worked on balbriggans, all gauges, flat and plaited work and fleece lined. Familiar with the Tompkins, Campbell & Clute, Cooper spring needle, Stafford & Holt, Leighton, Scott & Williams, McMichael & Wildman, and Nye & Tredick machines. Good reference. 3050, Textile World Record, Boston, Mass.

Overseer of Knitting in a small mill or fixer on latch needle machines in a large mill. Worked on all kinds of seamless hosiery, wool and worsted. Some experience on cotton. Familiar with the Geo. D. Mayo, Excelsior, Invincible and some experience on loopers. Good reference. 4607, Textile World Record, Boston, Mass.

Manager or Superintendent of a knitting mill. 46 years of age, married. Has manufactured all classes of underwear, both spring and latch needle. Familiar with all makes of machines. Good reference. 3646, Textile World Record, Boston, Mass.

Overseer of Knitting. Position wanted by a man 30 years of age, single. Worked on fine and heavy weight union suits. Familiar with Crane's rib circular machines. Good references. Will not go to Canada. 3946, Textile World Record.

Overseer of Knitting or hosiery machine fixer or foreman in the finishing department. Position wanted by a man 25 years of age, single. Has worked on fine cotton and mercerized hosiery. Would prefer a position on Jenckes Invincible machines, but has a good knowledge of Scott & Williams, Wildman, Geo. D. Mayo, Acme and Brinton footers. 4541, Textile World Record, Boston, Mass.

Superintendent or boss knitter. 30 years of age, married. Worked on men's plain and plaited fancy hose, ladies' plain and lace and misses' ribbed hosiery. Familiar with the Geo. D. Mayo, Acme, Paxton & O'Neil, Standard footers; McMichael and Wildman, Brinton ribbers and different makes of welters and loopers. Good reference. 4549, Textile World Record, Boston, Mass.

Superintendent, or Overseer of Knitting in a Hosiery Mill. Position wanted by a man 33 years of age, single, has worked on ladies', men's and misses' wool, worsted and cotton seamless hosiery on Wildman, Scott & Williams, Ruth and Brinton ribbers, Hepworth and Beatley loopers, Acme and Geor. D. Mayo automatic foot machine. Good recommendations. 3698, Textile World Record.

Overseer of Knitting. Position wanted by a man 39 years of age, married. Worked on double and single plush, plain single thread wool; worked on spring needle, also run wool and cotton on latch needle machines, Thompkins spring, Snyder, Fisher, McMichael & Wildman, Stafford, Holt latch needle, Payne, Tompkins winders. Good reference. 4073, Textile World Record, Boston, Mass.

Second Hand in Knitting Mill. Position wanted by a man 21 years of age, American. Worked on all kinds of goods on latch needle machines. Familiar with the following makes of knitting machines: Nye & Tredick, McMichael & Wildman, Scott & Williams, H. Brinton & Co., Stafford & Holt. Could take a position at two weeks' notice. Good references. 3975 Textile World Record.

Overseer of Knitting. Position wanted by a man 30 years of age, single. Worked on ladies' and gents' ribbed goods, shaped and plain. Familiar with Tiffany & Cooper cuff machines, Campbell & Clute machines, Scott & Williams, Smith & Fisher latch needle knitting machines. Will accept a position in New York state only. Good references. 3964 Textile World Record.

Superintendent or Overseer of Knitting. First-class man with a quarter of a century experience in some of the largest and best mills in the country. Has always succeeded in reducing waste and increasing quality and quantity of production. Familiar with spring needle circular machines on eiderdowns, stockinets, jerseys, fleeces and astrachans. Has several improvements on knitting machines. Age, 38 years, and married. Good reference. 4087, Textile World Record, Boston, Mass.

SPINNERS.

Overseer of Woolen Spinning. Familiar with the D. & F. machines. Worked on all kinds of stock, wool, cotton and shoddy mixes. Would prefer a position in the N. E. States. Good reference. 34 years of age, married. 4598, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning or second hand. 30 years of age, widower. Worked on all kinds of woolen goods and yarns from 7/8 to 6 run. Familiar with D. & F. machines. Will not go South. Good reference. 4586, Textile World Record, Boston, Mass.

Overseer or Second Hand of spinning in a woolen mill. Position wanted by a man 28 years of age, married, American. Worked on fancies and twists, etc. Familiar with Davis & Furber mules. Good references. 4022 Textile World Record.

Second Hand in a Woolen Spinning Room. Position wanted by a young man 30 years of age, single, has had a number of years' experience as spinner and has been allowed to fix his own machines. Would like to get a position as second hand where he could learn to fix mules under a good man. He is familiar with D. & F. or J. & B. machines, and wants a position in the West or Middle West. 3707, Textile World Record.

Boss Spinner in woolen mill. Worked on all kinds of woolen, cotton and shoddy mixed goods. Familiar with Johnson & Bassett. Would prefer Furbush mules. First-class recommendations; age 29; American. 3287, Textile World Record.

Overseer of Woolen Spinning or carding and spinning in a small mill. Married man, 38 years of age. Has worked on all kinds of woolen, cotton and shoddy mixed goods, yarns from 1/2 to 8 run. Familiar with all makes of American and English carding and spinning machinery. Will go any place for a good position. Good reference. 4502, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man, 48 years of age, American, married. Worked on all kinds of yarn from 1/2 to 10 run, all kinds of stock, wool, cotton and shoddy mixes. Familiar with J. & B., D. & F., Parr, Curtiss, Bideford, Pault Pavercroft mules. Will not go West or South. Good reference. 3810, Textile World Record, Boston, Mass.

Overseer of Spinning or twisting. 38 years of age. Has had a wide experience in the manufacture of linen threads and yarns, both wet and dry spinning. Familiar with all classes of twisting and carding machines and preparing. First class recommendations from leading firms. 4528, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man, 55 years of age, American, married. Familiar with J. & B. mules. Good reference. 3797, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a married man 44 years of age. Worked on all kind of yarns on Platt mules, D. & F. J. & B. and Tatham machines. First class reference. Could take position at short notice. Will not go South, West or Canada. 4076, Textile World Record, Boston, Mass.

Overseer Woolen Spinning. Position wanted by a man 45 years of age, married, worked on woolen goods made of wool shoddy and cotton mixes; good references; take position at short notice. 4044. Textile World Record, Boston.

Overseer of Spinning. Position wanted by a man 30 years of age; English. Has worked all kinds of stock, cotton, wool and shoddy, from 5/8 run to 13 and is familiar with Davis & Furber mules and operators. Good references. 3595, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning. Position wanted by a man 40 years of age, widower, worked on all kinds of yarns, wool, cotton and shoddy mixed. Familiar with the J. & B. and D. & F. machines. First class recommendations. 3720, Textile World Record.

Overseer of Spinning or carder and spinner in a small woolen mill. Position wanted by a man 55 years of age, married, American. Has worked on all kinds of wool, shoddy and cotton mixes, yarns from 1/2 to 10 run. Familiar with D. & F., J. & B., Whitley, Smith & Molton mules. Good reference. Will not go South or Pennsylvania. 3933, Textile World Record.

COTTON WEAVERS.

Overseer of Weaving in a cotton mill. Worked on all kinds of plain and colored goods, sateens, tickings, draperies, worsteds, lenos, and jacquard work. Familiar with all makes of cotton weaving machinery and jacquard head. 46 years of age, married. Will not go West. Good reference. 3120, Textile World Record, Boston, Mass.

Overseer of weaving, drawing in and twisting. Position wanted by a man 44 years of age; married; English. Has worked on plain twills, sateens, fancy lenos, Jacquard loppetts, also plush goods. Is familiar with Mason, Draper, Whitin and Crompton & Knowles looms. Good references. 3590, Textile World Record, Boston, Mass.

Assistant Superintendent or Overseer of weaving in a cotton mill. Position wanted by a man 31 years of age, married, American. Worked on plain sateens, fancy lenos, box work, as high as 100s warp, and 160s filling. Familiar with all kinds of machinery. Will not go West, South or Canada. Good references. 4019 Textile World Record.

Overseer of Weaving or designer. **Lawns, sheetings, twills, sateens, quilts, bedford cords, lappets. A young man; unmarried. Good experience and first-class recommendation. 3068, Textile World Record.**

Overseer of Cotton Weaving. Position wanted by a man, 27 years of age, American, married, with experience on prints, cambrics, sateens, drills, corded goods, etc. Worked on Draper, Whitin, Lowell, Mason and Colvin looms. Prefers a position in the East. 3430, Textile World Record, Boston, Mass.

Overseer of Weaving. Worked on sheetings, twills, sateens and fancies. Wants not less than $18 per week. 3157, Textile World Record.

Overseer of Cotton Weaving. Married, 38 years of age. Has worked on sateens, plain and fancy cotton goods. Is familiar with Whitin, Crompton & Knowles and Mason looms and could take a position at once. Good reference. 4090, Textile World Record, Boston, Mass.

Overseer of Cotton Weaving, or Assistant Superintendent. 42 years of age, married. Has worked on all kinds of cotton goods, coarse and fine, plain and fancy. Is familiar with all kinds of looms and an expert on Draper automatic looms. Good reference. Could take a position at once. 4089, Textile World Record, Boston, Mass.

Overseer of Weaving, Assistant Superintendent, or superintendent in a cotton mill. Position wanted by a man 46 years of age, married, American. Worked on prints, sheetings, shirtings, ducks, dress goods, leno, Jacquards, cottons from 4s to 113s warp, and 2.80 to 120 filling. Also on silks from 60s to 345s. Familiar with Lowell, Whitin, Draper, Mason, Lewiston, Knowles, Woonsocket, Colvin looms. Will not go to New York, New Jersey, Pennsylvania, West or South. Good references. 4014 Textile World Record.

Overseer of Weaving or general second hand in a cotton mill. Position wanted by a man, 28 years of age, American, married. Worked on twills, sheetings, drills, sateens, etc. Familiar with Mason, Colvin, Whitin & Draper looms. Good references. 3848, Textile World Record, Boston.

Overseer of Weaving in a cotton mill. Position wanted by a man 27 years of age, American. Worked on plain, twills, sateens, fancies, lenos, flannels, etc. Familiar with Crompton & Knowles, Whitin, Lowell and Mason looms. Good references. 3968 Textile World Record.

Overseer of Weaving in a cotton mill, or second hand in a large mill. Position wanted by a man 22 years of age, married. Has worked on plain, sateens, twills and fancy. Some experience on lenos. Familiar with Whitin, Colvin, Mason, Lowell, Lewiston, Crompton & Knowles looms, electric stop motion. Good references. 3916, Textile World Record, Boston.

Overseer of Cotton Weaving. Position wanted by a man, 39 years of age, American, married. Worked on all kinds of cotton goods, plain and fancy. On English, Colvin, Mason, Whitin and Draper looms. Could take a position at two weeks' notice. First class recommendations. 3735, Textile World Record, Boston, Mass.

WOOLEN WEAVERS.

Overseer of Weaving or dressing in a small woolen mill. Worked on wool and worsted goods. Familiar with the Knowles loom and different makes of dressing machines. 42 years of age, English, married. Good reference. 4594, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving or second hand in a good mill. Worked on cassimeres, meltons, kerseys, piece dyes, plain and fancy goods. Understands Knowles looms. 26 years of age, single. Good reference. 4612, Textile World Record, Boston, Mass.

Overseer of Woolen or worsted weaving in a small or loom fixer in a large mill. Worked on worsted and woolen goods. Familiar with the Knowles loom. Good reference. 38 years of age, married. 4600, Textile World Record, Boston, Mass.

Overseer of Woolen Weaving or second hand in a woolen mill. Worked on meltons, thibets, union cassimeres and fancy woolen goods. Familiar with the Crompton & Knowles, Stafford, Gilbert and dobby looms. Would like a position where there are Draper looms to get experience. N. E. States only. Good reference. 4599, Textile World Record, Boston, Mass.

Overseer of Weaving or Asst. Supt. Position wanted by a man 48 years of age, married. Has worked on all kinds of fancy woolen and worsted goods, wool and cotton and wool and shoddy mixes, and fancy cotton dress goods; can also design. Is familiar with Crompton & Knowles looms, Gilbert looms and dobby-heads, and Whitin plain and fancy looms. Has good references. 3501, Textile World Record.

Overseer of Woolen Weaving. 18 years' experience as overseer. Worked on cassimeres, cloakings, chinchillas, cheviots, beavers, meltons, shawls, also worsteds and on Crompton and Knowles looms, wants a position in the East. Good references. 3422, Textile World Record, Boston.

Overseer of Weaving in a woolen mill. Position wanted by a man 37 years of age, married. Familiar with all classes of woolens, fancy worsteds, cotton worsteds, unions. Familiar with Crompton & Knowles, Crompton & Thayer, Draper automatic looms. Good references. Will not go to Canada. 3965 Textile World Record.

Woolen Boss Weaver. Worked on worsteds, woolens of all kinds, also dress goods. American; 38 years of age; married. 3231, Textile World Record.

Overseer of Weaving. Position wanted by a man 28 years of age, single and Scotch. Has worked on wool and worsted, and union goods, blankets, shirtings, rugs, etc. Is familiar with Crompton & Knowles, also English looms and dobbies. Has good references. 3507, Textile World Record.

Overseer of Weaving. Position wanted by a man, American, 45 years of age and married. Has worked on dress goods, cloakings, flannels, meltons and unions. Is familiar with Crompton & Knowles and Stafford looms. Good references. 3494, Textile World Record, Boston.

Overseer of Weaving or Cloth Room. Worked on heavy ducks, denims, suitings, checks, lenos, fancy lenos and lappets, from 2s to 200s yarn carded and combed. Familiar with Lowell, Whiting, Crompton & Knowles, Mason and Draper looms. First-class recommendations. 34 years of age, married, American. 3309, Textile World Record, Boston, Mass.

Overseer of Weaving or second hand in a woolen mill. 38 years of age, married. Worked on wool and worsteds of all kinds, high and low grade, fancy and plain. Familiar with Crompton & Knowles looms. Good reference. Will not go West, South or Canada. 4548, Textile World Record, Boston, Mass.

Overseer of Weaving in a Woolen Mill. Position wanted by a man 42 years of age, married, American. Worked on cotton, worsteds, woolens, dress goods and fancy worsteds. Familiar with Crompton & Knowles looms. Will not go west, south or Canada. Good references. 4035, Textile World Record, Boston.

Asst Supt. or Overseer of Weaving. Position wanted by a man 50 years of age, married and American. Has worked on kerseys, beavers, cheviots, overcoatings, meltons, etc., and is familiar with all kinds of woolen machinery. First-class references. 3528, Textile World Record.

CARDERS.

Overseer of Woolen Carding and spinning. Worked on fancy cassimeres, tweeds, all grades of woolen goods, made from wool, cotton and shoddy mixes. Familiar with Davis & Furber mules and all makes of cards. Would accept a position anywhere where there is a healthy climate. 45 years of age, married. Good reference. 4615, Textile World Record, Boston, Mass.

Overseer of Woolen Carding or carding and spinning. Worked on all kinds of woolen, cotton and shoddy mixes. Familiar with all makes of carding machinery, D. & F., J. & B., and Bancroft mules. Could take a position at once. Good reference. 4608, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Worked on all kinds of woolen goods, also cotton, wool and shoddy mixes. Familiar with all makes of carding machinery. Will go any place for a good position. Good reference. 35 years of age, married. 4606, Textile World Record, Boston, Mass.

Overseer of Woolen Carding, or Carder and Spinner. Position wanted by a man 36 years of age, married, worked on all kinds of stock, wool shoddy, cotton, mixed goods, understand all makes of cards and J. & B., D. & F. mules. Good reference; will not go to Maine, Pennsylvania, West, South or Canada. 4037, Textile World Record, Boston.

Overseer of Woolen or worsted carding. Would accept a position as superintendent of a felt mill. Understand the business in every detail. Worked on all kinds of stock and all makes of cards. First class reference. Will go any place for a good position. 45 years of age, American, married. 3470, Textile World Record, Boston.

Overseer of Carding in woolen mill. Position wanted by a man 55 years of age, married. Familiar with all classes of goods, and all the different makes of machines. Will not go to the Southern States. Good references. 3947, Textile World Record.

Overseer of Woolen Carding. Position wanted by man 46 years of age, widower, worked on all kinds of woolen goods and on all kind of stock, wool, cotton and shoddy mixes. Good reference from four leading mills where employed, could take position at once as mill where last employed have stopped carding. 4039, Textile World Record, Boston.

Overseer of Woolen and Worsted Carding. Position wanted by a married man, 38 years of age; has worked on knitting and hosiery yarns. Is familiar with all makes of carding machinery. Good reference. Could take a position at short notice. Prefers a position in the New England or Middle States. 4088, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man 34 years of age, married, American. Worked on all kinds of stock, dress goods, blankets, etc. Has been overseer 11 years in his present position. Desires to make a change. Has been overseer in a number of the leading mills. Will not go South or to Canada. Good references. 3940, Textile World Record.

Overseer of Cotton Carding, or General Second Hand in a large mill. Married man, 34 years of age. Has worked on all kinds of fine and coarse combed yarns. Understands all kinds of cards, speeders and is an expert on combers. Good reference. Will not go South, West or Pennsylvania. 4096, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man 38 years of age, Scotch, married. Has worked on all kinds of woolen goods made from wool, cotton and shoddy mixes. Has worked in first class mills and has good references from same. Will not go South. 3920, Textile World Record, Boston.

Overseer of Cotton Carding. Position wanted by a man 57 years of age, married, American, has worked on all kinds of stock from 3/4 to 1 1/2 staple, all kinds of roving up to 18 hank, first class recommendations. 3713, Textile World Record.

Overseer Cotton Carding or Spinning desires position. Age 47; American; married. Is familiar with all the modern makes of English and American machinery, revolving top flat cards, single and double carding. 2073, Textile World Record.

CARDERS.

Overseer of Carding in cotton mill. Position wanted by a man 32 years of age, married, American. Worked on waste, Upland, Bender, Peeler and Egyptian, both combed and carded, making roving for yarns from 3s to 100s. Familiar with all kinds of machines. Good references. 3969 Textile World Record.

Overseer of Wool Carding. 37 years of age, married, American. Worked on fine and coarse woolen goods, cotton, wool and silk noils and mixes. An exceptional good man on low stock. Familiar with D. & F. and Cleveland cards. Good reference. 4522, Textile World Record, Boston, Mass.

Overseer Woolen Carding. Position by a man 33 years of age; married. Worked on kerseys, meltons, cheviots, blankets, robes, underwear and hosiery, felts and sale yarns. Worked on D. & F., Lombard, Cleveland, Furbush, Platt Bros., Thornton Bros., John Haigh, Barker, D. & F. and English condensers. 3462, Textile World Record.

Overseer of Carding in cotton mill. Position wanted by a man 28 years of age, married. Familiar with white and colored numbers up to 16 H. K. Familiar with the following makes of machines: Platt, Mason, Whitin, Lowell, Providence, Kitson and Atherton. Good references. Will not go to Pa., N. J., Western or Southern States, or to Canada. 3951, Textile World Record.

Overseer of Carding or superintendent in a shoddy mill, carder and spinner in a small woolen mill. Position wanted by a man, 38 years of age, Scotch-American. Worked on all kinds of stock, cotton and wool shoddy mixes. Familiar with all kinds of carding machinery. Could take a position at once. 3738, Textile World Record, Boston, Mass.

Overseer of Woolen Carding. Position wanted by a man 47 years of age, married. Worked on woolens and knit goods, both fine and coarse, and all makes of cards. Good reference from mills where he has been employed. 3535, Textile World Record, Boston, Mass.

Overseer Woolen Carding. Position wanted by man 36 years of age, married; worked on woolen goods of most all kinds on Cleveland, Furbush, Smith, Davis & Furber, Plat, Goldie & McCulloch bark condensers; good references. 4045 Textile World Record, Boston.

Overseer of Woolen Carding or second hand in a large mill. Position wanted by a man, 38 years of age, married, and has worked on all classes of wool, cotton and shoddy mixed goods. Understands all kinds of carding machinery. Will not go West or Canada. Could be employed at short notice. Good references. Address 3868, Textile World Record, Boston.

Overseer of Cotton Carding. Position wanted by a man, 33 years of age, American, married. Has worked on carded and combed hosiery yarn, colored yarns and warps. Familiar with American carding and combing machinery. Good references. 3864, Textile World Record, Boston.

Overseer of Cotton Carding. Position wanted by a man 40 years of age, English, married. Worked on Egyptian, Peeler, carder, combed and bleached cotton. Familiar with American and English carding machinery. Could accept a position at short notice and reasonable wages. Good reference. 3827, Textile World Record, Boston, Mass.

Assistant Superintendent or overseer of carding in a large mill. Position wanted by a man 47 years of age, married. Worked on lawns, sateens, upholstery and fancy cotton goods of all kinds. Has had a wide experience as overseer of carding, and a number of years as superintendent. Will not go to New Jersey, West, South or Canada. Will take position within reasonable notice. Good references. 3967 Textile World Record.

Overseer of Carding and spinning. Position wanted by a man 40 years of age, married. Is experienced on all kinds of stock and all numbers of yarn. Is familiar with Davis & Furber, Johnson & Bassett, Furbush, and Bridesburgh carding and spinning machinery. Good references. 3580, Textile World Record, Boston, Mass.

Overseer of Carding. Has held all positions in picker and card rooms. White and colored goods, 5s to 40s. 3070, Textile World Record.

DYERS.

Overseer of Silk Dyeing. Worked on all kinds of silk yarn and piece dyeing. Would accept a position in two weeks' notice. 35 years of age, married. Good reference. 4616, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 32 years of age, married and American. Has worked on fancy worsted and woolens, piece dyes, carriage goods, wool and worsted dress goods, men's wear, raw stock, cotton, worsted and linen yarns. Is familiar with Klauder-Weldon dyeing machinery. Good references. 3584, Textile World Record, Boston, Mass.

Overseer of Dyeing. A man 46 years of age, married. Worked on knit underwear, woolens, yarns, etc. Familiar with all kinds of machinery. Good reference. 4511, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man, 45 years of age, Scotch, married. Has worked on raw stock, cotton and woolen goods, knit goods in the garment and in the roll. Familiar with all kinds of dyeing machinery used in the dyeing of knit goods. Prefers a position in New York State. Good reference. 3803, Textile World Record, Boston, Mass.

Boss Dyer. Position wanted by a man 29 years of age, married. Has worked on cotton, wool and shoddy, raw stock, piece dye, silk noiles, cotton and worsted yarns. Can show bright shade on shoddy fast fulling, acid, aniline and sulphur colors. Good references. 3914, Textile World Record, Boston.

Boss Dyer in a Woolen Mill. Position wanted by a man 23 years of age, married, American. Worked on worsteds and woolens, raw stock, skein and piece goods. Familiar with Klauder & Weldon machines for yarn. Will not go South. Good references. 4036 Textile World Record, Boston.

Overseer of Dyeing and starching cotton piece goods. Position wanted by a man who has had a wide experience on all kinds of cotton piece goods, is familiar with jig, two and three box machines, also one box padding machine; 45 years of age, American. Good reference. 3781, Textile World Record, Boston.

DYERS.

Boss Dyer, scourer and bleacher in a knitting mill.—Worked on all grades of knitted underwear. First-class references. Will not go West or to Canada. 41 years old; married. 3004, Textile World Record.

Overseer of Dyeing. Or would accept a position as second hand in a mill on loose cotton and silk in order to get experience. Now employed as overseer on piece dyes, cost dyes and is familiar also with indigo dyeing. Good reference. 3936, Textile World Record.

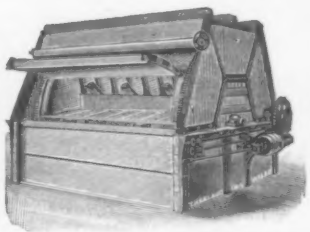
Expert Hosiery Dyer. Age 27; married and sober. Desires position of superintendent of dyeing in a first-class hosiery mill, one manufacturing high grade goods preferred. Has had over seven years' practical experience in dyeing one of the best aniline blacks on cotton, also fast colors on cotton, wool, silk and union hosiery. Best of references furnished. 2052, Textile World Record.

Chemist or Overseer of Dyeing. Position wanted by a man 28 years of age, single. Familiar with all laboratory dyeing. Worked on all classes of goods, such as come up in mill work. Graduated from the Institute of Technology, Boston, Mass., and has had several years' experience as chemist. Good references. 3960 Textile World Record.

Boss Dyer and Finisher. Familiar with silk, cotton, wool, underwear; also shirtings, scouring, fulling and bleaching. First-class recommendations. 928, Textile World Record, Boston, Mass.

Boss Dyer. Worked on cotton and wool and mixed stock, yarns and piece goods, hosiery, slubbing and raw stock; also scouring of wool; first-class recommendations; 28 years of age; single; English. 3327, Textile World Record, Boston, Mass.

Overseer of Dyeing in a woolen mill, or dyeing and finishing in a felt mill. Position wanted by a man 31 years of age, married. Has worked on all kinds of cotton, wool, shoddy mixes, raw stock, yarns cotton and wool, piano felts, chest protectors and hot felts. Good references. Could take position at once. Will go anywhere. 3911, Textile World Record, Boston.



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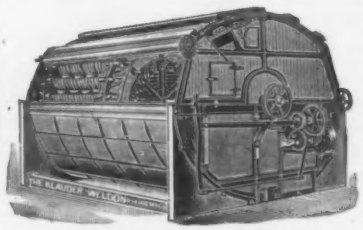

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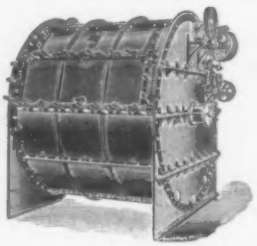
THE KLAUDER-WELDON DYEING MACHINE COMPANY

P. O. Box K, AMSTERDAM, N. Y.

Machines for Dyeing, Bleaching and Scouring Woolen, Worsted, Cotton and Silk Skeins—Slubbing—Raw Cotton and Wool, Waste, Rags, Shoddy, Hosiery, Underwear, Hats, Caps, Knit Cloth, Tapes, etc.



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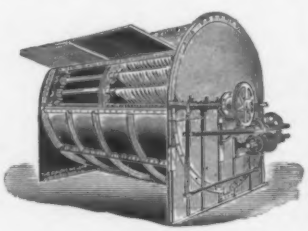
Special Machines for Sulphur Colors

WILL EARN THEIR COST IN
LABOR ALONE
IN FROM
6 TO 12 MONTHS
ACCORDING TO CAPACITY



SULPHUR SKEIN MACHINE.

DYERS.

Overseer of Dyeing. Position wanted by a man 48 years of age, American, married. Has worked on raw stock, piece dyes, yarns and blue vats. Worked in some of the leading mills for a number of years. Could take a position at short notice. 3835, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 39 years, American, married. Has worked on union and wool kerseys, cotton warp, meltons, raw stock, cotton yarns, worsted yarns, piece dye. Will not go West, South or Canada. Good references. 3,888 Textile World Record.

Overseer of Dyeing. Position wanted by a man, 37 years of age, Scotch, married. Has worked on sulphur blacks, indigo, alizarine, warps of fancy shades, raw stock, and skein yarns. Is familiar with Klauder & Weldon and Scotch tubs. Good references. Could take a position at short notice. 3842, Textile World Record, Boston.

Overseer of Dyeing. Position wanted by a man 35 years of age, American, married. Has worked on cotton and worsted yarns and worsted piece dyes. Good references. Could take position at once. 3886, Textile World Record.

Overseer of Dyeing. Position wanted by a man 36 years of age. Worked on all kinds of woolen goods, raw stock, piece dyes and yarns. Good references. Could take a position at once, on account of the mill being closed. 3955 Textile World Record.

Second Hand in Dye House, chemist or color mixer. Position wanted by a man 23 years of age. Has worked on cotton piece goods, yarns, raw stock, worsted yarns, wool piece dyed. Familiar with Jigs, Klauder and Weldon. Will go anywhere. Can take position at once. Good references. 3917, Textile World Record, Boston.

Bleacher and Dyer of cotton knit goods. Position wanted by a man 27 years of age, married, English. Has worked on web dyeing and bleaching, also garnet dye and bleaching, aniline black on hosiery. Will not go south. Good reference. 3762, Textile World Record, Boston.

Superintendent of Bleach or Dye Works, or would consider overseer in any department. Worked on sheetings, shirtings, cambrics, lawns, quilts, prints and linens. No knowledge of yarns. 38 years of age. Scotch; married. 1620, Textile World Record.

Overseer of Dyeing. Position wanted by a man, 35 years of age, married, English. Has had a thorough training in chemistry. Has worked on wool, cotton and shoddy raw stock, piece dyes, yarn bleaching, scouring, extracting, etc. Familiar with alizarine colors, all kinds of dyeing and scouring machinery. First class recommendations. 3736, Textile World Record, Boston, Mass.

Chemist or Boss Dyer on hosiery or cotton goods. Worked on hosiery, underwear, yarns and cotton raw stock. Familiar with all kinds of dyeing machinery; 27 years of age; American; first-class recommendations. 3289, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 30 years of age, American. Has worked on worsted and cotton yarns, mercerized piece dyes, fast shades on raw stock and slubbing. Is familiar with all kinds of dyeing machinery. Good references. 3592, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 32 years of age, married. Makes a specialty of fast black on hosiery and yarns, rumble and silk finish, also fancy colors and bleaching. Is familiar with all kinds of machinery used in hosiery and yarn dyeing. Good references. 3569, Textile World Record, Boston, Mass.

Overseer of Dyeing. Position wanted by a man 51 years of age, married, with A-1 references. Worked on stock for Traction and Army goods, Wood and Bisulphate Vats, Natural and Synthetical Indigo, also stock for cassimeres, blankets, robes, shawls, cotton, wool, shoddy mixes, cotton warps, mercerized effects. 3692, Textile World Record.

Dyer. Worked on all classes of goods, woolens, worsteds, yarn, piece dyes, slubbing, blue vats and cotton mixes. An American; married. 3085, Textile World Record.

FINISHERS.

Overseer of Woolen or worsted finishing. Worked or rain cloths, wool and worsted, unions and cotton worsteds. Familiar with all makes of finishing machinery. Good reference. 4595, Textile World Record, Boston, Mass.

Overseer of Finishing, assistant finisher or boss burler and sewer. Worked on all grades of woolen and worsted goods, cotton mixes. Familiar with all leading makes of finishing machinery. Could take a position at one week's notice. Prefer New England or Middle Atlantic States. Good reference. 3896, Textile World Record, Boston, Mass.

Overseer of Finishing, wet finisher or general second hand in a woolen mill. Familiar with woolens and worsteds, cotton worsteds, cotton mixes, thibets and steam finished goods. Also all makes of finishing machinery. Will accept a position most any place. 28 years of age, good reference. 4602, Textile World Record, Boston, Mass.

Overseer of Finishing, second hand or finished percher. Worked on broadcloths, kerseys, thibets, sackings, venetians, cassimeres, unions, cotton mixes, dress goods and worsteds. Understands all makes of finishing machinery. Prefers a position in the New England States. 4611, Textile World Record, Boston, Mass.

Overseer of Finishing in a hosiery mill, stock keeper or overseer of production. Worked on men's, women's, boys' and children's flat and ribbed hosiery, made from cotton, carded, combed and Egyptian. Also embroidered worsted and merino goods. Familiar with all makes of finishing machines. Prefers a position in the South. 32 years of age, married. Good reference. 4618, Textile World Record, Boston, Mass.

Overseer of Woolen or worsted finishing. Worked on all grades of woolen and worsted goods. 43 years of age, married. Familiar with all makes of finishing machinery. Will not go West, South or Canada. Good reference. 4596, Textile World Record, Boston, Mass.

Overseer of Finishing. Age 30, American, unmarried, with 6 years' experience as overseer, wants position in New England. Had experience on satinets, unions, and all goods where cotton warp is used, also on nearly all machinery used in making these goods. 3335, Textile World Record.

Overseer of Woolen Finishing. Position wanted by a man 26 years of age, single. Worked on kerseys, beavers, broadcloths, meltons, cotton worsteds, men's wear and dress goods. Familiar with all kinds of finishing machinery. Good references. 3954 Textile World Record.

Overseer of Finishing, cutting or seaming department in a knitting mill, or assistant superintendent. Position wanted by a man 42 years of age, married. Worked on flat Balbriggan and fleece lined underwear. Good references. Will not go West, South or Canada. 3966 Textile World Record.

Overseer of Finishing. Position wanted by a man 46 years of age, married, American. Has worked on all kinds of woolens and worsteds, overcoatings, cloakings, dress goods, plushes, satinets and cotton warp fabrics. Is familiar with all kinds of finishing machinery. Good references. 3654, Textile World Record, Boston, Mass.

Overseer of Finishing. Position wanted by a man 42 years of age, American and married. Has worked on all classes of fancy worsteds and is familiar with all kinds of finishing machinery. Good references. 3497, Textile World Record, Boston, Mass.

Overseer of Finishing in a woolen mill. Position wanted by a man 35 years of age, married, American. Worked on all classes of woolen and worsted goods, from highest to lowest grades. Familiar with all kinds of machines. Will not go West, South, Canada, Maine, Vermont, Pennsylvania. Good references. 4026 Textile World Record.

Overseer of Finishing in a woolen mill. Position wanted by a man 34 years of age, married, American. Familiar with cassimeres, meltons, thibets, kerseys, worsteds, cloakings, cotton worsteds and all kinds of cotton warp goods. Good references. Familiar with all kinds of finishing machinery. 3958 Textile World Record.

FINISHERS

Overseer of Finishing. Married man, 32 years of age. Worked on all classes of woolen goods, kerseys, broad cloths, meltons, cassimeres, cheviots, thibets, etc. Familiar with the wet and dry end and all kinds of machinery. Good reference. 4533, Textile World Record, Boston, Mass.

Overseer of Finishing or second hand in a woolen mill. 29 years of age, married, English. Worked on woolen and cotton warp broad cloths and thibets. Good reference. 4544, Textile World Record, Boston, Mass.

Overseer of Finishing.. Position wanted by a man 30 years of age, married, American. Has worked on worsted serge cassimeres, flannels, overcoatings, cloakings, dress goods, meltons, kerseys, union, etc. Is familiar with all kinds of finishing machinery. Good references. 3668, Textile World Record, Boston, Mass.

Overseer of Finishing. Worked on cotton unions, dress goods, cassimeres, beavers, kerseys, covert and army goods. First-class recommendations; 55 years of age. 1661, Textile World Record, Boston, Mass.

Overseer of Finishing in a woolen mill. Position wanted by a man 28 years of age, American. Worked on all wool, wool and shoddy, cotton mixes, dress goods, kerseys, coverts, men's wear, etc. Familiar with all American makes of machinery. Will not go to New Jersey, Pennsylvania, West, South, or Canada. Good references. 3934 Textile World Record.

Overseer of Woolen Finishing. Position wanted by a man, 51 years of age, American, married. Has worked on all kinds of woolen goods and has had a wide experience on face finished goods. Is now employed in a large mill, but desires to make a change. Good references. 3861, Textile World Record, Boston, Mass.

Boss Finisher or Assistant Designer, or boss burler and sewer in a woolen mill. Position wanted by a man 25 years of age, married, American. Worked on kerseys, thibets, plain and fancy cheviots, cassimeres, homespuns, dress goods, flannels and various piece dyes. Familiar with Knowles' looms, Jaines, Hunter, Rodney, Hunt, Parks, Woolson, Curtis & Marble. Will not go West, South or Canada. Good references. 4012 Textile World Record.

Overseer of Finishing. Position wanted by a man, 38 years of age, married, American. Has worked on kerseys, friezes, thibets and all kinds of woolen and worsted goods. Familiar with all kinds of machinery. First class reference. 3748, Textile World Record, Boston, Mass.

Overseer Finishing, or Stock Dyeing and Finishing. Worked on Union cassimeres, satinets, all wool cassimeres, cheviots, dress goods, meltons and kerseys; 39 years of age; single; Scotch, with first-class reference from past employers. 3449, Textile World Record.

Overseer of Finishing or asst. supt. woolen mill. Position wanted by a man 50 years of age, married. Worked on all kinds of woolen goods, cotton warp, unions, etc. Familiar with all kinds of finishing machinery. Good references. 3875, Textile World Record.

Overseer of Finishing. Position wanted by a man 40 years of age, married and American. Has worked on all kinds of wool and worsted and cotton mix goods and cotton worsteds. Is familiar with all kinds of machinery used in wet and dry finishing. Good references. 3536, Textile World Record, Boston, Mass.

Superintendency of Bleaching, dyeing and finishing wanted by a thoroughly practical man, textile chemist, at present employed. Has had wide experience on the finest muslins and organdies. Laces and embroideries a specialty. Fully understands aetying, fireproofing, carbonizing, singeing, dyeing, etc. A practical man and no experimenter. An expert bleacher and finisher. 3443, Textile World Record, Boston.

Superintendent of Finishing Works or overseer. Position wanted by a man who has a wide experience on cotton goods of all kinds, fast blacks and sateens. 49 years of age, married, with good reference from past employer. Will go any place for a good position. American. 3461, Textile World Record, Boston.

MISCELLANEOUS.

Overseer of Drawing and Spinning in a worsted mill. Worked on alpaca, long and short wools. Familiar with all makes of drawing and spinning machinery. Will not go South. 38 years of age, married. Good reference. 4614, Textile World Record, Boston, Mass.

Overseer of Beaming, slashing, spooling, long chain quilling and warping. Worked on fancy shirtings, silk and cotton coat linings, ginghams, awnings, tickings and denims. Familiar with the Lowell, Phillip, Howard & Bullough, Draper and Entwistle machines. Two workers in the family. 40 years of age, married. Good reference. 4617, Textile World Record, Boston, Mass.

Bookkeeper in a Cotton Mill. Position wanted by a man 35 years of age, married, American. Good references. Will not go to Me., N. H., Vt., Pa., N. Y., N. J., West or Canada. 4003 Textile World Record.

Overseer of Beaming, Spooling and Quilling. Position wanted by a man 40 years of age, married, an American. Worked on all kinds of cotton goods. Familiar with all kinds of machinery used in a beaming department. Good references. 3688, Textile World Record, Boston, Mass.

Second Hand over Warping and spooling in a cotton mill. Position wanted by a man, 60 years of age, widower; worked on tickings, awnings, shirtings, flannels, sail cloths, prints, etc. Will not go south. Good reference. 3778, Textile World Record, Boston.

Assistant Bookkeeper, Cashier or Paymaster in a cotton mill. Position wanted by a man 28 years of age, single, American. Has had about 16 years' experience in office work in cotton mills. Good references. 3995 Textile World Record.

Overseer of London Shrinking Department. Position wanted by a man 33 years of age, single, and has had 13 years experience with the English method of shrinking. Familiar with Crawford Hydraulic Presses, also Curtis & Marble. Good references. 3963, Textile World Record, Boston.

Superintendent of a Print Works, bleach or dye works is open for engagement. Has worked on all kinds of cotton goods and finished, printed, bleached and dyed all classes of goods from ducks to fine lawns. Would like to communicate with manufacturers in the South in establishing a plant of this kind; good references. 4041 Textile World Record, Boston.

Overseer of Woolen or Worsted Dressing. Married man, 35 years of age; has worked on woolen worsteds and cotton worsteds. Is familiar with all makes of twisting, spooling and dressing machinery. Will not go West, South or Canada. Good reference. 3500, Textile World Record, Boston, Mass.

Overseer of Ring or Mule Spinning in a cotton mill of from 20,000 to 60,000 spindles. 45 years of age, married, American. Has worked on all kinds of goods, white and colored. Familiar with English and American carding machinery, combs, warping, spooling and winding. Can furnish the best of references as to character and ability. 3850, Textile World Record, Boston, Mass.

Master Mechanic. Position wanted by a man 44 years of age; has had experience as master mechanic in cotton and knitting and all textile mills. Will not go west, or Canada. Could take a position at short notice. 3782, Textile World Record, Boston.

Young Man Wants a Position in a Cotton Yarn mill in Fall River or New Bedford. Has had experience in the shipping department and as receiving clerk. Would like a position where he could learn something about raw stock, in the carding or spinning room. Would work for reasonable wages. Good reference. 4524, Textile World Record, Boston, Mass.

Comber Man. Position wanted by a man 24 years of age; single; has worked on the Hetherington, Whitin, Nasmith, Dobson & Barlow combers. Wants a position in Massachusetts or Rhode Island only. 4085, Textile World Record, Boston, Mass.

Master Mechanic. Position wanted by a man 42 years of age, married. Familiar with all kinds of machinery. Could be employed at 2 weeks' notice. First class references. 3930, Textile World Record, Boston.

MISCELLANEOUS.

Superintendent of a bleachery or print works or assistant superintendent. Position wanted by a man, 38 years of age, an American, married. Worked on all kinds of cotton piece goods. Familiar with all kinds of machinery used in handling these goods. Now employed. First class recommendations. 3724, Textile World Record, Boston, Mass.

Overseer or Mule or ring Spinning. A married man, 45 years of age, English. Worked on all kinds of cotton goods and all numbers, both coarse and fine, also hosiery yarns. Familiar with all makes of English spinning machinery. Will not go South. Good reference. 4520, Textile World Record, Boston, Mass.

Young Man, American, wants position as boss weaver or assistant superintendent. Has worked on fancy worsteds, cassimeres and cheviots. Can also design. 1712, Textile World Record.

Overseer of Spooling, warping, twisting, winding and dressing in a cotton mill. Position wanted by a man, 27 years of age, single, American. Has worked on all kinds of yarns, from 10s to 20s, white and colored. Familiar with all kinds of machines used in this department. Will go any place for a good position. Good reference. 3811, Textile World Record, Boston, Mass.

Loom Fixer. Position wanted by a man 29 years of age, single, Swede. Has worked on all kinds of woolen goods, and is familiar with Knowles looms. First-class references. 3648, Textile World Record, Boston, Mass.

Overseer Twisting, spooling and warping in a cotton mill. Position wanted by a man 33 years of age, married, American. Worked on coarse and fine, white and colored cotton goods. Familiar with Draper, Collins Bros. and Whitin and Lowell machines. Wants New England only. Good reference. 3830 Textile World Record, Boston, Mass.

Overseer of Cotton or Woolen Dressing. 47 years of age, married, American. Worked on all classes of woolen and cotton goods, both plain and fancy. Familiar with all makes of machines used in dressing departments in either a cotton or woolen mill. Good reference. 4509 Textile World Record, Boston, Mass.

Overseer of Back Filling or starching. Position wanted by a man, 38 years of age, married, American. Has worked on all kinds of cotton goods and understands all kinds of starching machinery. At present employed, but could accept a position at short notice. Will not go South without good inducements are offered. Good reference. 3932, Textile World Record.

Sewing Machine Fixer and boss finisher in a knitting mill. Position wanted by a man 31 years of age, single, American. Worked on men's, ladies' and children's knit underwear. Familiar with Union Special, Merrow, Singer, Wheeler & Wilson, Wilcox & Gibbs, Scott & Williams, Standard and Metropolitan machines. Good references. 4024 Textile World Record.

Overseer of Dressing. Position wanted by a man 36 years of age, married. Also capable of taking charge of winding, spooling and twisting. Familiar with fancy worsteds, woolens, piece dyes, rain coatings and silk mixtures. Good references. 3948, Textile World Record.

Overseer of Worsted Drawing. Position wanted by a man 30 years of age, married, and American. Is experienced on mohair, alpaca and wool. Bradford system, and is familiar with Prince, Smith and Hall & Stells, worsted machinery. Good references. 3593, Textile World Record, Boston, Mass.

Sketch Maker in Print Works. Position wanted by a man 50 years of age, married. Has worked on all kinds of goods that are printed. Twenty years' experience in large mills. Good reference. 4078, Textile World Record, Boston, Mass.

Second Hand in Cloth Room wants position as overseer or second hand; 20 years' experience on all kinds of goods; understands napping thoroughly; good references. 3048, Textile World Record.

Loom Fixer or second hand in weave room. Worked on all kinds of mixed goods, cotton and woolen dress goods, fine lenos, Jacquard and drop box looms. Age 33; French; good references. 3265, Textile World Record.

MISCELLANEOUS

Foreman or Fixer in Knitting Mill. Position wanted by a man 34 years of age, married, American. Worked on all classes of cotton hosiery. Familiar with Standard, Acme, Invincible, Geo. D. Mayo loopers, Hepworth ribbers, Ruth Brinton, Wildman machines. Good references. 3999 Textile World Record.

Card Grinder, 38 years of age; English; with experience in good mills. Worked on print cloth and on all makes of English cards. Will go anywhere for good position. Good references. 3426, Textile World Record.

Master Mechanic or Chief Engineer. Married man, 40 years of age. Understands all makes of machinery used in a cotton or rolling mill. Understands electricity, steam engines and would go any place for a good position. Good reference. 4506, Textile World Record, Boston, Mass.

Overseer of Tenters. Position wanted by a man 28 years of age, American, married. Worked on cotton, worsted and dress goods. Has had 12 years' experience in this class of work and is familiar with the Granger & Phenix pin and clip frames. Will not go West, South or Canada. Good references. 3885, Textile World Record.

Overseer of Dressing, Spooling, Winding, Twisting and Drawing In. Position wanted by a man 33 years of age, married, German. Has worked on fancy worsteds, fancy cassimeres, cheviots and piece dyes. Is familiar with Davis & Furber and Cleveland machinery. First-class references. 3627, Textile World Record, Boston, Mass.

Master Mechanic, assistant superintendent in a cotton mill or bleachery or mechanical engineer. 41 years of age. Has had experience on sheetings, lawns, cambrics, print cloths, ducks and filled goods. Has had experience on machinery used in the manufacture of the above goods and also machinery used in bleacheries, paper mills and box machinery. Good reference. 3153, Textile World Record, Boston, Mass.

Overseer of Burling, mending, shipping or cost clerk, cashier, designer or assistant designer in a woolen mill. Married man, 32 years of age, English. Worked on men's wear, suitings, trouserings, coatings, ladies' dress goods and cotton worsteds. Understands the English, American and jacquard looms. Good reference. 4553, Textile World Record, Boston, Mass.

Master Mechanic, chief engineer or traveling salesman. Position wanted by a man 45 years of age, married. Has worked on all classes of engines, boilers and electricity. First class draftsman. Could take a position at short notice. Good reference. 4540, Textile World Record, Boston, Mass.

Sewing Machine Fixer or machinist. Position wanted by a married man, 31 years of age. Is familiar with all makes of Union Special, National, button-hole and Singer sewing machines. Would prefer a position in New York State. Good reference. 4551, Textile World Record, Boston, Mass.

Overseer of Dressing, spooling and drawing in a woolen mill. Position wanted by a married man 27 years of age. Has worked on all classes of woolens and cotton worsteds. Familiar with Davis & Furber dressing machines and all makes af stop motion on spoolers. Will not go South. Good reference. 4550, Textile World Record, Boston, Mass.

Overseer of Dressing, spooling and twisting in a woolen mill. Position wanted by a man 44 years of age, married, American. Worked on fancy woolen and worsteds of all kinds, both wet and dry. Familiar with Davis & Furber and Cleveland dressing, spooling and twisting machinery. Wife is a good fancy weaver. Good references. Will not go West, South, Canada or New Jersey. 3990 Textile World Record.

Overseer of Beaming or quilling. Will go anywhere. Has worked on white and colored cotton goods. First-class references. Age 45, married. 1162, Textile World Record.

Master Mechanic. Position wanted by a man, 43 years of age, married. Has worked in colored cotton mills mostly and familiar with all kinds of cotton machinery. Good reference. 3935, Textile World Record.

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when you use

Wyandotte Textile Soda

Because Wyandotte Textile Soda scours both raw wool and finished cloth without causing the least injury to any of the natural properties of the wool fiber.

Because it leaves the wool snow white, soft and lofty.

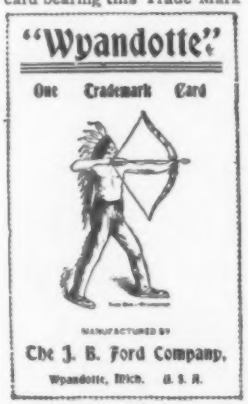
Because of the thoroughness of its work, it eliminates all danger of streaks in dyeing.

When you use Wyandotte Textile Soda your money comes back many fold in the improved appearance and prolonged life and wearing qualities of the cloths and garments.

Wyandotte Textile Soda gives to the output of your mill a certain distinctness or quality which always insures your product a stronger market.

Order from your supply house. You take no risk; this soda is not an experiment but a recognized article of value.

None Genuine except with card bearing this Trade Mark



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Sole Manufacturers

THIS SODA HAS BEEN AWARDED THE HIGHEST PRIZE WHEREVER EXHIBITED.

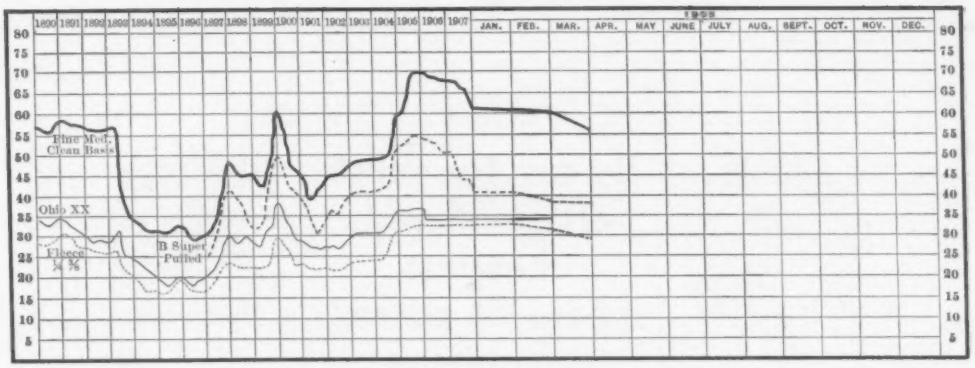


CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

The Wool Market.

This market belongs to the seller. Prices are distinctly lower than when our last report was written, and the business transacted has been to supply immediate requirements. The largest consumer of wool in the country reports two-thirds of its machinery idle. Nearly the same proportion of idle looms will be found outside of the mills of this leading company. Under such conditions the wool market is of course depressed. Manufacturers are showing no desire to increase their stocks of raw material that they do not need, and dealers are equally unwilling to buy the new clip in the West. Imports of wool are only half as large as last year. The present situation is in striking contrast with that of a year ago, and as is natural under existing conditions sentiment is decidedly bearish, probably more so than is warranted. It must be admitted, however, that it is extremely difficult to find anything to warrant the belief in a revival during the present year. Political agitation and the coming revision of the tariff are important factors to be reckoned with. Doubt as to an early revival is not inconsistent with a belief that the bottom has been reached. This is the view many in the trade are taking, and there is much to support it. The change from prosperity to the present depression was so sudden as to give rise to the belief that the causes are superficial, and that with their removal an improvement will be equally rapid.

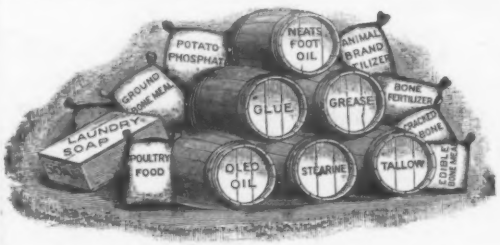
Connecticut, Stafford Springs. The Central Mfg. Co. has added 4 new looms. Kerseys, broadcloths, etc., are manufactured on 7 sets and 45 looms. J. P. Jenness is treas. and buyer.

*Maine, Lisbon Falls. The Worumbo Mfg. Co. advises that nothing definite can be given out at present regarding the proposed new worsted mill. This plant has been running full time during the depression.

*Massachusetts, Holyoke. The land adjacent the Jackson St. mill, which was reported bought by the Farr Alpaca Co., will not be used for building purposes. As previously reported, improvements are going forward in the weaving department.

*Massachusetts, Spencer. The Priscilla Woolen Co. advises that the plant is being run full time on orders. A new boiler has been ordered to replace the one damaged several days ago, but the plant will not stop to make the change.

*Ohio, Cleveland. In addition to the increase in the power plant being made at the Cleveland Worsted Mills, a new office building is now under way. As previously reported, a large weave-shed will be erected in the spring.



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FOR COTTON AND WOOLEN MILLS

Consolidated Rendering Co.

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By far the most efficient and cheapest means of power transmission

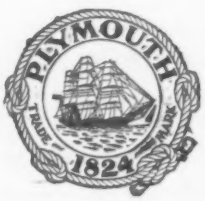
Plymouth Manila Rope Drives

At 2-5 the cost for installation as compared with leather belting, rope drives are far more effective, safer, transmit large or small horse power in any direction, provide for future growth and greatly lessen maintenance expense.

Plymouth Rope Drives by their absence of slip, steadiness, freedom from electrical disturbances, great durability and low cost make the ideal drive for textile mills.

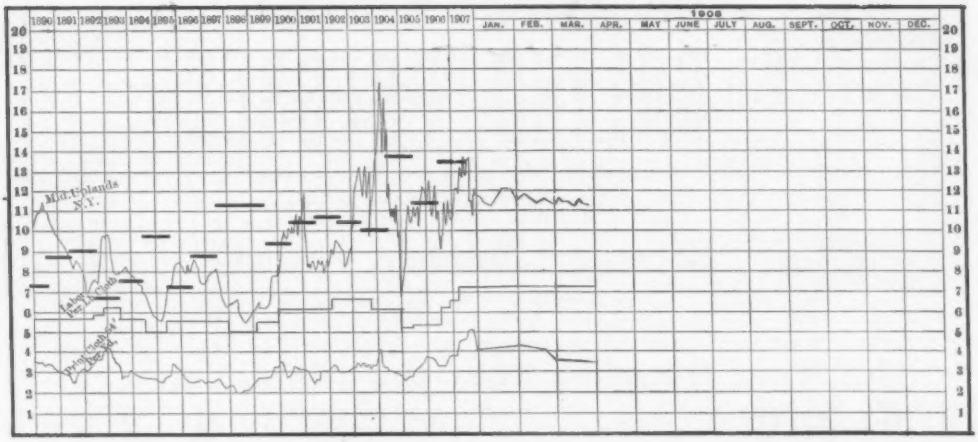
Put your transmission problems up to us. Our long experience in manufacturing, installing and using rope drives is at your service.

Send for our booklet on "Rope Driving."



Plymouth Cordage Co.

No. Plymouth, Mass.



The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE.

The Cotton Market.

Both the future and spot markets have been dull and depressed. The crop of rumors has been small, but certain facts have stood out prominently and shown that the depression is justified. Chief among these is the curtailment of working time, especially by the mills in this country. Foreign spinners are using less cotton and plans for short time in Lancashire are taking definite form. The movement into sight has continued small, and is reported by the Chronicle as follows from Sept. 1 to March 28 for a series of years:

1907-08, Mar. 27	9,746,957	bales
1906-07, Mar. 28	11,783,485	bales
1905-06, Mar. 30	9,189,787	bales
1904-05, Mar. 31	10,420,033	bales
1903-04, Apr. 2	9,088,651	bales
1902-03, Apr. 3	9,443,935	bales

This evidence of a reduced supply is, however, more than offset by that of a reduced demand. The world's visible supply on March 27 is estimated by the same authority at 4,466,497 bales, as compared with 5,371,102 bales on corresponding date in 1907, 4,659,871 bales in 1906, and 4,248,411 bales in 1905.

Alabama, Huntsville. The Huntsville Cotton Mills Co. has shut down for general overhauling and repairs, which will take from ten days to two weeks to complete.

*Connecticut, Oakdale. The damage to the picking department of the Massasoit Mfg. Co., caused by the recent fire, has been repaired, and the plant is running overtime every night in order to keep up with orders. A part of the mill which was not in use has been fitted up as a new picking department.

Massachusetts, Lowell. The Boott Cotton Mills have installed their second Barber Warp Tying machine. Alterations are being made in the building at the corner of Sirk and Amory Sts., but the space will not be used for manufacturing.

*Massachusetts, New Bedford. Contract for the iron work of the new weave shed being erected for the Potomska Mills has been awarded to the Fairhaven Iron Foundry.

*New York, LeRoy. The officers of the LeRoy Cotton Mills are interesting local investors in the new stock being issued. The capital stock is being increased from $450,000 to $750,000 to finance the enlargement previously reported.

North Carolina, Cooleemee. The Cooleemee Cotton Mills of the Erwin Cotton Mills Co., has engaged J. E. Sirrine of Greenville, S. C., to prepare plans for a picker house to replace the one recently destroyed by fire. The J. F. Gallivan Building Co., Greenville, S. C., has contract for the construction work.

WEIMAR BROS. MANUFACTURERS OF Cotton Mercerized Tapes,

SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES.

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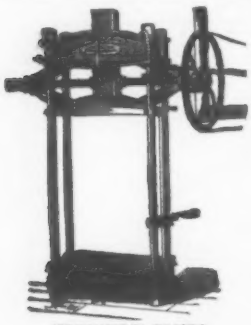

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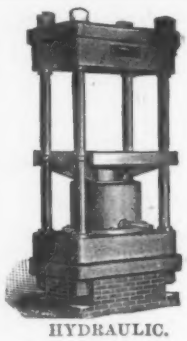

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Get Your Supplies from the Manufacturers.

EXCELSIOR WOOL OIL COMPOUND AND COTTON SOFTENER

Established 1841

Burckhardt & Co.

Cincinnati, O.

The Excelsior Compounds are the best lubricating and softening products for wool, cotton, wool and cotton mixed. Eliminates the scouring process and effects large saving in time and soap. They will not gum in the cards.

Write for prices and particulars.

OLIVE OIL TALLOW SOAP

LARD OIL

Handles heavy cases in a Time-Saving Way—The Economy Steel Tiering Machine

Goods are put in place with ease and economy. The largest amount of stock can be stored in the smallest possible space and yet be instantly accessible. In use in representative mills. Investigate its merits and 'twill be in use in yours. Write for prices.

Economy Engineering Co. 58-64 N. Jefferson St. Chicago, Ill.

Your Safety Depends on the Efficiency and Strength of Your Valve.
BETTER BE SAFE THAN SORRY.

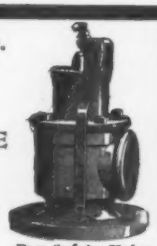
Water-Relief Valve.

BUY CROSBY STEAM APPLIANCES WHICH ARE RELIABLE

WRITE FOR CATALOGUE.

Steam Engine Indicators
Recording Gages
Blow Off Valves
Brandon Rubber Pump Valves
Single Bell Chime Whistles
Feed Water Regulators
Lubricators
Pressure and Vacuum Gages
Water Gages, Gage Glass, Etc.

ENGINE—BOILER AND MILL SUPPLIES



Pop Safety Valve

CROSBY STEAM GAGE AND VALVE CO.

Stores, BOSTON, NEW YORK, CHICAGO, LONDON. Office and Works, BOSTON, MASS.

Yarn Department.

GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

The Cotton Yarn Market.

With the exception of a fair transient demand for hosiery yarn, business has been exceedingly dull during the past few weeks, and the market on all kinds of yarn has fallen to a new low level in prices.

Cost seems to have no bearing on the price of cotton yarn at present. In spite of the curtailment by spinners, there still is more than enough yarn on the market to meet the demand. This is preventing any reaction in prices, and even preventing any stability to prices.

Buyers expect a cut in the price on every new order they place.

Spinners claim that some numbers of weaving yarns are selling at fully 20 cents per pound below the cost of production. The cotton market has been declining steadily in New York. This has at last had some effect on the farmers who have been holding cotton for high prices.

Spot markets in the South have been easier recently. Quotations are nominal on about the following basis:

Eastern Cops.

6s	18½
8s	19
10s	19½
14s	20½
16s	21
18s	21½
20s	22
22s	22½
24s	23
26s	23½
30s	24½
34s	25½
36s	26½
40s	27½

On cones, ¾c. more up to 14s; 1c. more from 15s to 22s; 1½c. from 23s to 35s, and 2c. above that.

Eastern Two-Ply Skeins, Carded Peeler.

12s	20
14s	21
18s	22
20s	23
24s	24½
26s	25
30s	25½
36s	28
40s	30
45s	39
50s	41
55s	46
60s	50

Eastern Two-Ply Warps, Carded Peeler.

2/30s	26
2/36s	29
2/40s	31
2/45s	40
2/50s	42
2/60s	51

Egyptian Weaving Yarns. Single Skeins Combed.

30s	40
36s	41
40s	43
45s	45
50s	47
55s	51
60s	60
70s	65

Massachusetts, Pittsfield. W. E. Tillottson Mfg. Co. advises that the report that the Silver Lake Woolen Mill is shut down and new machinery being installed, is incorrect. The plant is in full operation.

THE J. R. MONTGOMERY CO.,

Windsor Locks, Conn.

MANUFACTURERS OF

Mercerized Cotton Yarns Gives the High Silk-Like Lustre in Knit Goods and Woven Fabrics.

Novelty Yarns Boucle, Bourette and Spirals, in Cotton, Wool, Worsted, Mohair and Silk.

Cotton Warps on Beams, Jack Spools and Tubes. In Fancy, Twist, Colors and Printed.

GREENE & DANIELS MFG. CO.,

COMBED, CARDED AND GASSED

Yarns, Threads, Twines and Chain Warps.

DYE SULPHUR BLACKS DIRECT IN COPS, CONES OR TUBES.

Colored and Bleached Yarns Furnished in any manner desired by the trade.

Pawtucket, R. I.

MONUMENT MILLS,

Manufacturers of

White, Colored, Fancy and Double Twist

COTTON WARPS

HOUSATONIC, MASS.

4s to 60s.

THESE MULES CANNOT BREAK THE BANDING —MADE BY—

M. J. TOOHEY & CO., OF FALL RIVER, MASS.

Banding made from Egyptian or White Cotton Yarn as Desired.

The Other Fellows Banding.

The Merwin Paper Company

Hartford, Conn.

Press Papers and Fender Boards

Correspondence Solicited

Mills at Rainbow, Conn. Address Inquiries to Rainbow, Conn.

The Philadelphia Market.

Southern frame spun cones:—

7s and coarser	18
8s and 9s	18-18¼
10s	18½-19
12s	19-19½
14s	19½-20
16s	20-20½
18s	20½
20s	21
22s	21½
24s	22
26s	22½
30s	23
40s	31
50s	41

Southern high grade mule yarn:—

Cones.

10s	20
12s	20½
14s	21½
16s	22
18s	22½
20s and 22s	23-23½
24s	24

Southern frame yarn, lower grades:—

6s and 8s	17
10s	17½

Eastern cones (high grade quality):—

10s	22
12s	22½
14s	23
16s	23¾
18s	24¼
20s and 22s	24¾-25

Skein yarn (mostly Southern):—

4s and 8s soft	16½
10s and 12s	17-17½
14s to 20s	17½-18½
22s	19½
14/2	17½
16/2	18
20/2	18½-19
30/2	21
40/2	28
16/3 slack	18
12/3 slack	17½
8/3 carpet	16½
8/3 slack	16½
9/4 slack	16½

Warps (Southern):—

10s to 12s	17
14s	17½
16s	18
20s to 22s	18½-19
26s	20
14/2	18
16/2	18½
20/2	19
24/2	20
30/2	21
40/2	29

JAMES E. MITCHELL CO., COMMISSION MERCHANTS.
Cotton Yarns
AND COTTON CLOTHS.
122-124 Chestnut Street, PHILADELPHIA, PA.
73 Leonard Street, NEW YORK.
Brown Building, 185 Summer Street, BOSTON, MASS.
25 South Tryon Street, CHARLOTTE, N. C.

CATLIN & CO.,
Cotton Yarns.
345 Broadway, NEW YORK.
67 Chauncy Street, BOSTON.
128-130 Chestnut Street, PHILADELPHIA.
605 Medinah Temple, CHICAGO.

Harding, Whitman & Co.,
Dry Goods Commission Merchants,
COTTON AND WORSTED YARNS.
BOSTON. NEW YORK. PHILA.
CHICAGO. BALTIMORE. ST. LOUIS.

A. D. Salkeld & Bro.
COMMISSION MERCHANTS
DEP'T. FRED'K VIETOR & ACHELIS
COTTON YARNS
66-72 LEONARD STREET - - NEW YORK

Fred Sternberg & Co.
530 Broadway, - NEW YORK.
MERCERIZED TURKEY RED GASSED } COTTON YARNS.

LUDWIG LITTAUER,
SUCCESSOR TO
MOELLER & LITTAUER, 109 Greene St., New York
SILK, WORSTED, WOOLEN YARNS COTTON AND MOHAIR
Polished Threads and Tinsel. Artificial or Wood Silk.
Mercerized, Turkey Red, Fine Gassed Yarns.
SILK MILL, BOONVILLE, N. Y.

High Grade Hosiery Yarn
White and Colors. All Numbers. Sewing Twines on Cones and Tubes
SPECIALTIES IN WEAVING YARN
Black and White. Double and Twist for Woolen Trade.
CANNON MILLS 53-5 Worth Street, New York
Philadelphia Office, 205-7 Chestnut St.

C. MOORE & CO.,
Manufacturers of
TWINES, THREADS AND YARNS
Jacquard Harness Twines of all kinds
on hand and made to order.
S. W. Cor. Fifth and Market Sts., Phila.

S. T. Crocker, Pres. W. F. Stiles, Treas.

ORSWELL MILLS

Fitchburg, Mass.

Capacity, 45,000 Spindles.

HIGH GRADE YARNS

From Egyptian and Peeler Cottons, Carded or Combed, in Chains and Skeins, on Balls, Beams, Spools, Cops, Cones, Tubes, Single or Twisted.

Cotton Yarns

Jenckes Spinning Company
Pawtucket, R. I.

Carded and Combed single and twisted Yarns and Threads from Peeler, Sea Island and Egyptian Cottons, on Cops, Cones and Tubes or in Skeins and Warps. Six Cord Thread Yarns a Specialty **Bleached or in colors**

GRANT YARN CO.,
COMBED AND CARDED COTTON.

YARNS 40's and above. AND
FITCHBURG, MASS. **WARPS**

F. W. MAURER & SONS CO.
MANUFACTURERS OF
TAPES, BINDINGS, NARROW FABRICS AND EDGINGS FOR NOVELTY CURTAINS
Office, 528 Cherry St. Factories, 529 & 531 Arch St. and 524 Cherry St., and Germantown Ave. & Bristol St.
PHILADELPHIA

Hoffman, DeWitt & McDonough Co., Inc.

Diamond Stay Bindings TRADE MARK

Manufacturers of
Tapes, Webbing and Bindings.

COTTMAN and G STS., PHILADELPHIA
CHELTENHAM, PENNA.
Bell Telephone, 235-D Cheltenham

Simplex Yarn Tables.

Showing equivalent sizes of different systems of numbering yarn; cotton, woolen, worsted, etc., so that the sizes of different standards may be quickly compared. Also contains a number of other valuable yarn tables for designers, manufacturers and knitters. PRICE 50c. Textile World Record, Boston.

Established 1880 Capital $20,000.00

New York Silk Conditioning Works
138-140-142 Spring Street
New York, N. Y.

Do you know how much water you are buying in your wool, cotton and silk? Write us.

Ballou Yarn Co.
PROVIDENCE. R. I.

Harness and Seine Twines and other Job Gassing, Winding, etc. All Numbers
GASSED YARN SPECIALTIES

C. M. BLAISDELL, Pres. and Treas. G. A. BLAISDELL, Vice-Pres. and Sec'y.
Established 1860—Incorporated 1892.

THE S. BLAISDELL, JR., CO.,
COTTON, EGYPTIAN PERUVIAN
American Long Staple a Specialty. Shipments direct to mill from Egypt, Peru and all American Southern Points.
CHICOPEE, MASS.
Cotton Waste Purchased on Yearly Contract from Mills.

Reels for Cotton WOOLEN AND WORSTED
Patented Hosiery Winders, Cop Winders and Spoolers.
LINDSAY, HYDE & CO.,
2134 to 2130 East York St., PHILADELPHIA, PA.

Lowell Crayons Meet the requirements of any cotton, woolen or worsted mill.
May we send samples? 15 colors and white.
Lowell Crayon Co., Original Manufacturers **Lowell, Mass.**
Trade Mark on every box.

Mixed colored yarns (mock twist, half colors):—

6s to 10s	19½-20½
12s to 14s	21-23
16s to 18s	24-25

Mock Egyptian, 2c. advance over white.

Egyptian, 5 to 6c. above best quality white.

Alabama, Huntsville. Rumors to the effect that the Merrimack Mfg. Co. will close down are denied positively by Joseph J. Bradley, agent of the concern. This is a branch of the Merrimack Mfg. Co., Lowell, Mass.

Alabama, Sylacauga. J. P. Batson is interested in the establishment of a cotton hosiery knitting plant. Mr. Batson would like to correspond with manufacturers of necessary machinery and dealers in cotton knitting yarns.

Arkansas, Cottonplant. Local interests are agitating the organization of a company to build a cotton mill. William T. Tice is prominently identified with the proposition.

*Canada, Quebec, Beauharnois. At a meeting of the creditors of the Dominion Woolen Mfg. Co., E. D. Robert was appointed liquidator. It was reported last week that the plant had decided to go into voluntary liquidation.

Connecticut, East Norwalk. Oscar E. Rudolph, proprietor of the Oriental Rug & Carpet Works, is operating four hand looms and one sewing machine on rag carpets, portiers and fluff rugs. Cotton warps are bought in chains.

Connecticut, Meriden. The plant of the Silver City Braid Co. is running on a schedule of 13 hours a day, owing to the large number of orders on hand which call for early delivery.

*Connecticut, Montville. It is stated that the Monarch Woolen Mills will shortly resume. This plant shut down in October, being among the first to suffer by the dullness in the heavy woolen goods market. Although nothing has been definitely decided upon, it is probable that samples will be made up and submitted to the trade.

Connecticut, Uncasville. A slight fire in the plant of the Uncasville Mfg. Co., supposed to have originated from spontaneous combustion, caused a trifling amount of damage. The operation of the mill was not affected.

*Georgia, Barnesville. Thomas D. Stewart and Frank M. Inman of Atlanta, and R. E. Hightower of Thomasville, have purchased the Aldora Mills from R. I. Taylor, receiver for the Exchange Bank, and will put the plant in operation at once. The probability of this transfer taking place was reported last week. The Aldora Mills have equipment of 10,000 mule spindles which manufacture 9s to 18s cotton yarns.

Georgia, Columbus. There are rumors of the sale of a large tract of land suitable for cotton manufacturing purposes, to New York parties. No names are connected with the deal.

LINEN YARN IMPORTER.
HUGHES FAWCETT, 115 Franklin Street, NEW YORK.
Flax, Hemp and Jute Line and Tow Yarns,
For Weaving Purposes.
Linen Jacquard Harness Twines,
Fine Cotton Harness and Heddle Twines,
For Cotton, Silk, Woolen and Carpet Manufacturers.
Correspondence solicited. Samples promptly furnished.

DUNCAN & YOUNGS
95 Worth Street, NEW YORK
Practical Manufacturers of
YARNS, THREADS, TWINES, CORDS, ROPE
AND MILL SUPPLIES
Anything in the line you cannot get anywhere else apply to us.

FRANK A. TIERNEY,
TOPS, NOILS, ROVINGS, YARNS.
Wool, Silk, Mohair, Camels Hair, Ramie.
Garnetted Stocks
Silk also Ramie Tops and Noils, Ramie, Silk, and Silk Noil Yarns,
Special Textile Fibres and Novelties.
Wool Exchange Bldg., 260 West Broadway, New York.

THE RUSSIA FLAX CO.
Importers of Flax
FOR ALL PURPOSES.
Correspondence solicited.
477 Broadway, - Brooklyn, N. Y.

A Book for Designers and Weavers.
MANUAL OF WEAVE CONSTRUCTION,
By IVO KASTANEK,
One of the Leading Authorities on this Subject in Europe.
Translated and Arranged for American Practice by Samuel S. Dale.

In this book all the foundation and derivative weaves for harness looms are systematically classified and explained.

The weaves are divided into three general classes, plain, twill and satin. Under each of these divisions are given rules for constructing derivative weaves, which are illustrated with over Five Hundred Drafts, Diagrams and illustrations of cloth samples.

For self-instruction the workers in the mill find it of great value and as a book of reference it is equally well adapted for the practical weaver, designer and the superintendent.

There are over Five Hundred Illustrations and Diagrams, many showing the cloth with weave construction.

Over One Hundred Pages. Handsomely Bound in Green Cloth and Gold. Price, $1.00.

LORD & NAGLE COMPANY,
144 Congress St., Boston.

Pocasset Worsted Company

WORSTED YARNS

100 Boylston Street, - Boston, Mass.

French System. **B. F. BOYER CO.,** Bradford System.

MANUFACTURERS OF

WORSTED AND WOOLEN YARNS,

Office and Mill, River Ave. and Marlton St. CAMDEN, N. J.

KROUT & FITE MANUFACTURING CO.,

Manufacturers of

Silk, Cotton and Mercerized Narrow Fabrics

SPOOL TAPES A SPECIALTY.

Telephone Connection. Office and Mill, Allegheny Ave. and Emerald St., PHILADELPHIA.

WORSTED YARNS

RICHARD CAMPION.

SELLING AGENT FOR

Bristol Worsted Mills,
Highland Worsted Mills.
The French Worsted Co.

300 Chestnut Street,
PHILADELPHIA, PA.

EDDY & STREET,

Cotton, Woolen

Yarns and Braids

Worsted, Spun Silk.

PROVIDENCE, R. I.

Beacon Narrow Fabric Co.

Braids & Tapes

Notre Dame St. FALL RIVER, MASS.

Woolen and Merino YARNS

Eaton Rapids Woolen Mills,

EATON RAPIDS, MICH.

Bradford System French System

STEPHENSON & CO.

Worsted and Woolen Yarns

240 Chestnut Street
PHILADELPHIA.

Worsted AND Woolen **Yarns**

WALTER McCOOK

BELL TELEPHONE LOMBARD 3790

576 Bourse
Philadelphia

Joseph D. Swoyer & Co.,

Manufacturers and Commission Merchants

Woolen, Worsted and Cotton Yarns

MARINER AND MERCHANT BLDG.
3rd and Chestnut Streets, PHILADELPHIA

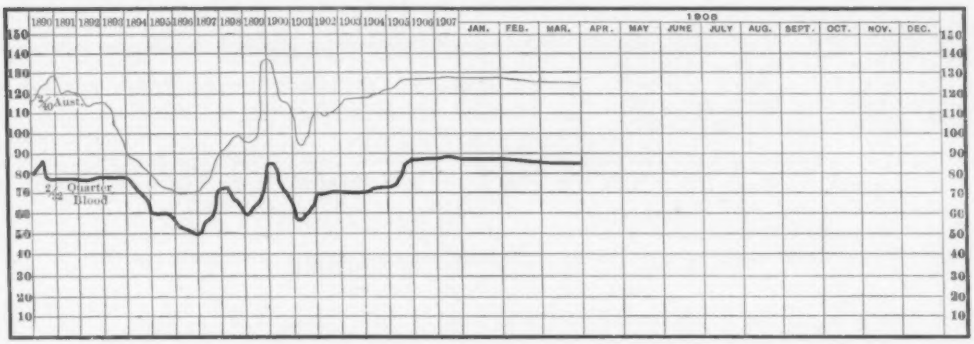


CHART SHOWING RANGES OF PRICE OF WORSTED YARNS.

Woolen and Worsted Yarn Market.

The spinners of woolen and worsted yarns convey the impression that business is picking up gradually and that prices, which have about reached the bottom figures, will not decline any further from the figures which are quoted in this report. There is a fairly good demand for knitting yarn, as a majority of the knitters have received some good orders for future delivery, especially on high grade goods, which, naturally, makes a call for the higher grade of knitting yarns. The trade, at this time, seems to be better in the East than in the middle West, from which locality business has been coming for the past several months. There is very little call, however, from the glove manufacturers, who are practically doing nothing, their business being at a standstill.

The dress goods heavy weight season is about over and most of the mills are now working on samples for the next light weight season. The numbers mostly asked for from this trade are 32s and finer counts in fancy mixtures.

The underwear trade is extremely dull and orders from this quarter are not coming in at all.

Men's wear clothiers are assembling their lines making ready to start out for fall. Every one is interested as to the right time to start off on the road. The general impression seems to be that after Easter will be sufficiently early, as the retailers are not very anxious to place orders, many of them being behind in the payment of their bills and are not desirous of incurring new obligations before the old ones have been cleaned up. Then, too, they want to know the condition of the stock and also what the consumer is going to demand as regards colors. At this time of the year it is next to impossible for retailers to know what his trade is going to call for next spring and the very best judges in the market can only make a guess. There are a few houses out, particularly those who sell the jobbing trade, and if duplicate orders are being taken which, however, is not general, as the rank and file of the trade will not be ready to place orders until after Easter, all indications pointing that way The duplicates that have been placed are an expression of confidence in particular lines of cloths or styles and do not represent sales to the retailers. As far as prices are concerned the impression is that they will remain firm. Where the manufacturing clothier is going to get his goods to deliver the orders when taken, is a question that no one can answer, as the mills are making no stock and the clothier is buying no goods, many of them making up their lines from sample cuts and sample pieces. When the business does come every one will want their goods delivered immediately, which is a physical impossibility. It looks very much as if a great many deliveries will be taken in August and September instead of June and July as in previous years. The outlook, however, is decidedly brighter. Collections are much better and with a continuance of good weather there is no reason why there should not be a fair business for the coming fall.

2/12 to 2/16 low common	60-62½
2/26 to 2/28 common	75
2/12 to 2/20 1/4 blood	78-80
2/26 to 2/28 1/4 blood	80-82½
2/32 1/4 blood	82½-85
2/20 3/8 blood	85-87½
2/26 3/8 blood	87½-90
2/30 3/8 blood	90-92½
2/36 3/8 blood	92½-95
2/40 1/2 blood	1.05-1.07½
2/40 delaine	1.12½
2/50 delaine	1.25-1.27½
2/40 Australian	1.27½-1.30
2/50 Australian	1.30
2/60 Australian	1.40
2/24 lustre	85
2/28 lustre	87
2/30 and 3/32 lustre	90-92½

TRADE MARK REGISTERED IN
NON-FLUID OILS
UNITED STATES PATENT OFFICE

There is a Non-Fluid Oil to suit the needs of every machine. For example our White Grades of Non-Fluid Oils have met with extraordinary success for lubricating travelers on twister rings, particularly when wet twisters are operated. Do not befoul rings and rails, lengthen life of travelers, help work to run better with fewer ends broken down and *reduce troubles from stained yarn.*

It will pay you to investigate the manifold advantages of Non-Fluid Oils over common oils and greases.

Samples Free. Write for Booklets.

ORIGINATORS AND SOLE MANUFACTURERS

New York & New Jersey Lubricant Co., 14-16 Church St., New York City.

William B. Charles,
Amsterdam, N. Y.
Cotton Yarns, Cotton Cloth, Silesia, Sateens,
For the Underwear Trade.

EDWIN F. SCHOFIELD,
ALL GRADES
PULLED AND FLEECE WOOLS
FOREIGN NOILS, CARPET WOOLS.
COTTON WASTE.
Mariner and Merchant Building,
3d and Chestnut Streets, Philadelphia, Pa.

JOSEPH M. ADAMS CO.
WOOLEN YARNS,
Carpet Backing and Rug Yarns a Specialty.
ARCOLA MILLS,
Main St., foot of Centre St., Manayunk, Philadelphia.

Knitting and Weaving YARNS.
Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment.
EDWARD S. HYDE,
226 CHESTNUT STREET,
Philadelphia, Pa.

2/36 lustre	97½
1/24 worsted and 80s single cotton for raincloths	1.00-1.05
1/24 worsted and 120 single cotton for raincloths	1.15-1.20

FRENCH SPUN YARN.

1/20 1/4 blood	80-82½
1/20 high 1/4	88-90
1/20 3/8 blood	95-97½
1/20 1/2 blood	1.02-1.04
1/20 high 3/8	1.02½-1.05
1/30 high 1/4 blood	87½-90
1/30 3/8 blood	1.02½-1.05
1/30 1/2 blood	1.06-1.07
1/40 1/2 blood	1.09-1.10
2/50 1/2 blood	1.25
1/50 delaine	1.22½
1/40 Australian	1.25
1/50 Australian	1.30
1/60 Australian	1.40
1/70 Australian	1.45

Massachusetts, Lowell. As a result of the cut down in wages, the beamers and drawing-in girls of the Appleton Co., 38 in number, have left their work. This is the only labor difficulty in the city resulting from the cut down in wages which went into effect Monday morning.

Massachusetts, North Adams. The National Bank of Commerce of New York has been granted leave to bring suit against the receivers of the Arnold Print Works to establish a lien on the accounts and bills receivable of the Arnold Print Works and also upon the finished and unfinished goods in the storehouse, No. 1. This is to pay the balance of about $2,000,000 on a loan of $2,500,000 that the bank had made to the Arnold Print Works in 1906. The affairs of the Arnold Print Works are gradually growing brighter and more machinery is being started up to fill orders which are coming in.

*Massachusetts, Winchester. On Saturday, April 4, at the office of Dwight Smith & Son, 310 Congress St., the property of the Chas. N. Bacon Felt Works will be sold at auction. It will be remembered that the Bacon Company was declared bankrupt in November, Dwight Smith being appointed receiver.

CHENEY BROTHERS

Silk Manufacturers. So. Manchester, Conn.

Trams, Organzine and Spun Silks in the hank, or on spools and cones for woolen manufacturers.

Silks for electrical uses, insulation and special purposes made to order.

Knitting Silks, Ribbons and Piece Goods for Trimming Knit Goods.

Dress Silks, Satins, Linings, Printed Pongees, Foulards and Decorative Silks; Upholstery Goods, Ribbons, Sashes, Plushes and Velvets.

WILLIAM RYLE & CO.,

Foreign and Domestic

Spun Silk Yarns and Noils.

Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.

54 Howard St., cor. Mercer St., NEW YORK.

SAUQUOIT SILK MFG. CO.,

INSULATING AND BRAIDING SILKS.

ORGANZINE, TRAM & HOSIERY SILKS.

Fast Dye Organzines for Woolen Manufacturers a Specialty.

Mills: Bethlehem, Pa., Phila., Pa., Scranton, Pa. New York Representatives, Wm. Ryle & Co., 54 Howard St.—Phila. Office, 4015 Clarissa St., Nicetown.—Chicago Office, 188-190 Market St.—Boston Office, 78 Chauncy St.

Crochet Lace Edgings

Spun Silk, Splicing Yarn, Mercerized Yarns, Cotton Warps, Sewing Threads, Tapes, Braids, Domets, Cambrics, Silesias.

Write for Prices and Samples.

George W. Chapin, 229-231 Church St., Philadelphia.

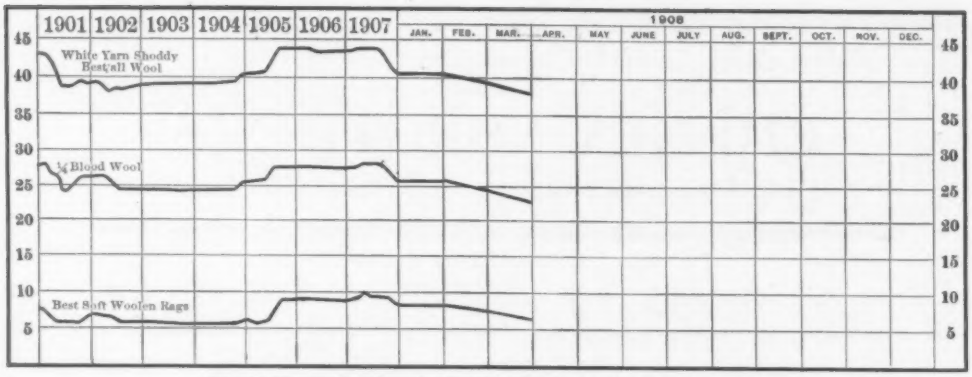


CHART SHOWING RANGE OF PRICES OF SHODDY, RAGS AND NOIL.

The Rag and Shoddy Market.

Business in this market is at a standstill. The trend of fashion away from fabrics in which wool substitutes could be used made the business dull when other branches of the textile trade were active. Now that the general situation is depressed the rag and shoddy market is brought to its present condition. Transactions are of the most meager description. Prices have not fallen as low as might be expected, this being due to the fact that, in the absence of any need for wool substitutes, manufacturers cannot be tempted by low prices to buy these materials. Cotton and wool wastes are in a similar state. We quote as follows:

SHODDIES AND EXTRACTS.

White yarn, best all wool	45-47
White knit, all wool, best fine	35-40
White knit, No. 2	30-36
Light yarn, extra fine	31-36
New pure indigo blue	29-31

Merino.

Fine light, all wool	24-26
Medium light, all wool	16-18
Fine black, all wool	26-29
Fine dark, all wool, best grade	21-22
Medium dark, all wool, No. 2	15-18
Red knit stock, strictly all wool	20-21
Red flannel, all wool	22-24
Dark blue for hosiery, strictly all wool, No. 1	21-23
Dark blue for hosiery, not all wool, No. 2	15-17

WOOLEN RAGS.

Fine merchant tailors	11-12
Choice light colors	15-17
Browns	12-13½
Blacks	9½-12
Fine blues, plain	9-11
Fine dark	10½-12½
Medium dark	6½-8

Worsteds.

Blue	14-17
Black	20-22

Serges.

New black	13-15½
New blue	13-16

Flannels.

New scarlet	19-20½
New blue	15½-17½
Cloakings	3-5

SOFTS AND KNIT STOCK.

Soft woolens, best	5½-6½
Old white flannels	20-22½
Old red flannels	13-15
Old blue flannels	8-9½
Old plaids	8½-9
White stockings	20-22½
White hood stock	20-21½
Clear hoods	9-10½
Blue stockings	8-9
Fancy stockings, No. 1	9-11½
Gray stockings	9½-11½
Black stockings	9-10½
Knit stock comforters	7-8½
Red knit	13-14½
Light gray knit	10½-12
New light fancies	14½
New fancies	11-12½

Merinos.

Light, fine	16-18
Light, coarse	6½-7½
Fine, dark	11-12½
Coarse, dark	4-6
Blue	10-12½
Black	13½-14½

FLOCKS.

Shear, fine white, all wool	10½-12
Fine indigo blue, all wool	7½-8½
Fine black and blue, all wool	6-7½
Fine dark, all wool	3-5
Gig, fine, all wool	2½-4
No. 1 black, all wool cut	6-9½

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No. 2 Oily Card	4½
Peeler Combing	10-12
Egyptian Combing	9-11
No. 1 Linters	5½
No. 2 Linters	3-5½
Woven White Clips	7½
Woven Colored Clips	3-4

New Jersey, Paterson. The cylinder head blew out in the engine room of the Barbour Flax Sinning Co., causing a shut down of several days. The damage has been repaired.

*New Jersey, Paterson. An inventory of the stock of the Clowes-Sothern Co., recently reported in bankruptcy, is being taken and it is expected that the mill will resume under the management of David Cohen, receiver, on the completion of the inventory. A meeting of the creditors will be held shortly to arrange the affairs of the company.

New York, Astoria. Two hundred employes of the Champion Silk Co., who have been out on strike a number of weeks, have returned to work. Broad silks are manufactured on 100 looms.

New York, Gouverneur. John J. McCloskey of Philadelphia, Pa., has bought the plant of the International Lace Mfg. Co. for $250,000, besides the interest on the first mortgage bonds of $125,000 and other charges. Mr. McCloskey is quoted as stating that the property will shortly be started up in full.

New York, New York. The Blumenthal & Edwards Co. has been incorporated with capital stock of $60,000. Albert Blumenthal, 31 West 71st St., Lewis M. Cohen and John A. Edwards, of Ridgewood, N. J., are the incorporators. It is stated that cotton and other fabrics will be manufactured.

*New York, Niagara Falls. No further information is obtainable regarding the proposed plant for the Ryder Patent Yarn & Mfg. Co. of New York, which it was reported some time ago would locate here. It is stated that options have been secured on a tract of land containing about 23 acres, but it is probable that nothing definite has been accomplished.

New York, Schenectady. The Alpha Knitting Co., which has been running on half time for a number of weeks, has resumed full time in all departments, owing to the number of orders received.

*North Carolina, Cameron. Charles C. Jones, who was reported as contemplating starting a small knitting mill of about 20 machines, has not definitely decided to start the plant.

North Carolina, Wendel. R. B. Whitley is interested in the formation of a cotton mill company. No details of the proposed organization have been given out.

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LIABILITIES (Including Capital)	13,659,487
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NET SURPLUS OVER ALL LIABILITIES AND RESERVES	6,703.211
Surplus as Regards Policy-holders	10,203,211
Losses Paid Since Organization Over	110,000,000

Note amount of surplus after providing for San Francisco and other conflagrations.

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Acids.

Acetic, 100 lbs.	2.60-3.25
Citric, domestic	51½-54
Oxalic	8½-9
Sulphuric, 66°, 100 lbs.	1.25-1.80
Muriatic, 18°	1.20-1.80
Tartaric crystals	28-29½

Miscellaneous Chemicals and Dyestuffs.

Acetate of lime, gray, 100 lbs.	2.55-2.85
Alum, lump	1.70-2.50
ground	1.80-2.10
powdered	2.80-3.30
Aqua ammonia, 26°	4-6½
Ammoniac, sal., gray	6-8½
Borax, bbls.	5-6½
Brimstone, crude, ton	24-50
Copperas	60-80
Cream tartar, crystals	22-24
Fuller's earth, powdered, ton	18-22½
Glauber's salt	52-65
Potash, chlorate, crystals	10-11
powdered	9-11½
carbonate	4-6½
Soda, bicarbonate	1.64-1.75
Soda, caustic, domestic, 60 per cent.	1.75-1.92
Sal., American	74-85
Vitriol, blue	5-6½
Acetate of soda	4-6
Acid, picric, best crystals	26-28
tannic, commercial	35-40
Albumen, egg	60-75
blood	25-38
Alizarine, red	17½
Aniline, oil	12-14
salt crystals	14
Bichromate of potash, American	9½-10
Bichromate of soda	7½-8
Bisulphite of soda	2-2½
Cutch, mat	5-6½
Dextrine, imported potato	6½-7½
Divi-divi, ton	44.00-67.00

New Hampshire, Enfield. Some departments of the Baltic Mills have been running overtime and it is stated that the whole plant will shortly be in full operation.

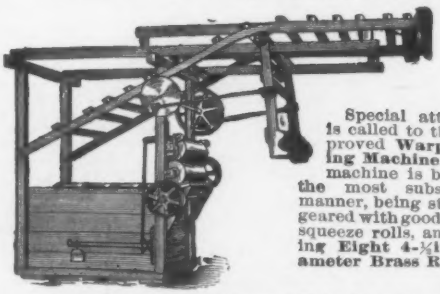
New Hampshire, Wilton. The spinning room of the Wilton Mfg. Co. is being run overtime and there has been a marked increase in the business of the Hillsboro Mills.

New Jersey, Camden. The Becker-Denison Co. has been incorporated with capital stock of $75,000. Frank F. Denison, Herbert Simons and Frank A. Kuntz are the incorporators. Shoddies and cotton and wool wastes will be manufactured.

New Jersey, Hampton. The shoddy plant operated by John Nierenberg has been partially destroyed by a bomb.

New Jersey, Paterson. Sela Doremus, Joseph L. Kaufman, Harry Kaufman and Sally Young, partners in the American Shawl Co., have sold the plant to Daniel Green. Forty broad looms and 10 shawl are operated in the Pope Mill, Lincoln and Water Streets.

The Reliance Warp Dyeing Machine.



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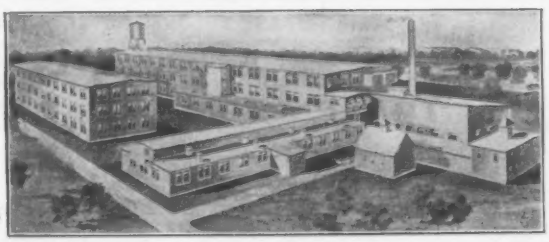

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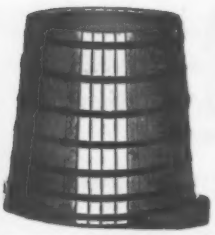

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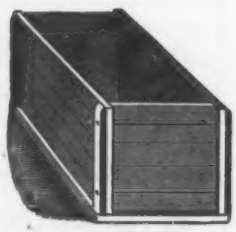

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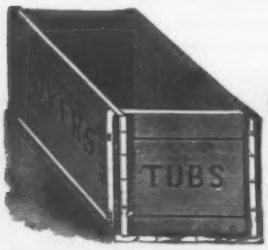

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Down Town Office, 140 Chestnut Street, Corner Second.

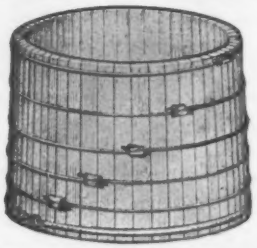
Hours from 12 to 1

TANKS

All sizes all shapes.

Built to Last

LARGE TANK WORK A SPECIALTY



Send for catalog. Established 1849.

The A. T. Stearns Lumber Co., Boston

Notice to Hosiery Manufacturers!

The Most Productive, Strongest and Best

Full Fashioned Hosiery Machines

System **G. Hilscher, Chemnitz, Saxony,**

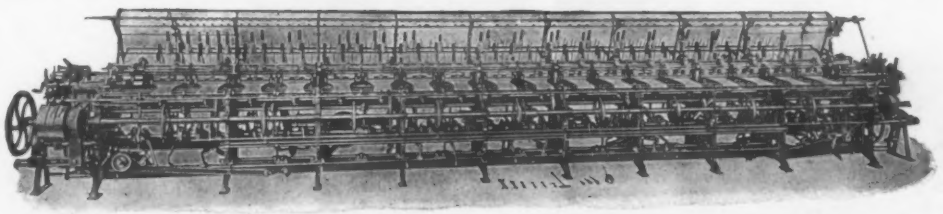
Can Be Delivered in Short Time and Fully Guaranteed
By the Exclusive Agents and Importers

THE GROSSER KNITTING MACHINE CO.

WOOL EXCHANGE
Rooms 400-421-423

MAX NYDEGGER

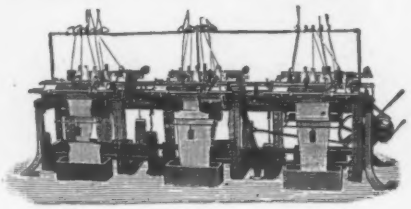
260 W. Broadway
NEW YORK



18 Section "COTTON HILSCHER" Machine for Full Fashioned Silk Hosiery
Gold Medal, Paris, 1900 — Numerous Patents Covering Special Improvements

All Special Machines For Any Article That Is Knit

GROSSER Flat Knitting Machines
For HAND Power or FULLY AUTOMATIC Power MACHINES. Most productive and best machines for Sweaters, Jackets, Blouses, Wool Hosiery, Gloves, Mittens, Sporting Goods in Plain, Fancy and Jacquard Work, Shaker Articles, etc. Large stock on hand. Power Machines to be seen in operation.



FRENCH FRAMES
C. Terrot Söhne, Cannstatt, Würt, famous builders of the best Circular Frame for Finest Underwear, Fleece Linings, Gloves, Special á-jour (open work) Fabrics, etc.

RASHEL MACHINES [Double Rib Warp Knitting Machines.]
For Fancy Goods in largest variety, Shawls, Capes, Caps, Borders, Fringes, Lace Work, etc., in silk, wool, cotton.

SPOOLERS, Parafiners, Finishing Machines for the knitting business.

Exclusive Agency for the Famous

Julius Koehler DIAMENT OVERSEAMERS, indispensable for all full fashioned articles, Hosiery, Gloves, Jersey Sweaters, Sporting Goods, etc.

LOOPERS Double thread Lock stitch, self-cutting and cleaning attachment. Reliable money saver.

FRITZ ZACKE LATCH NEEDLES, for any purpose in the knitting line, patented rivets.

Samples, Specifications, Prices, etc., upon application.

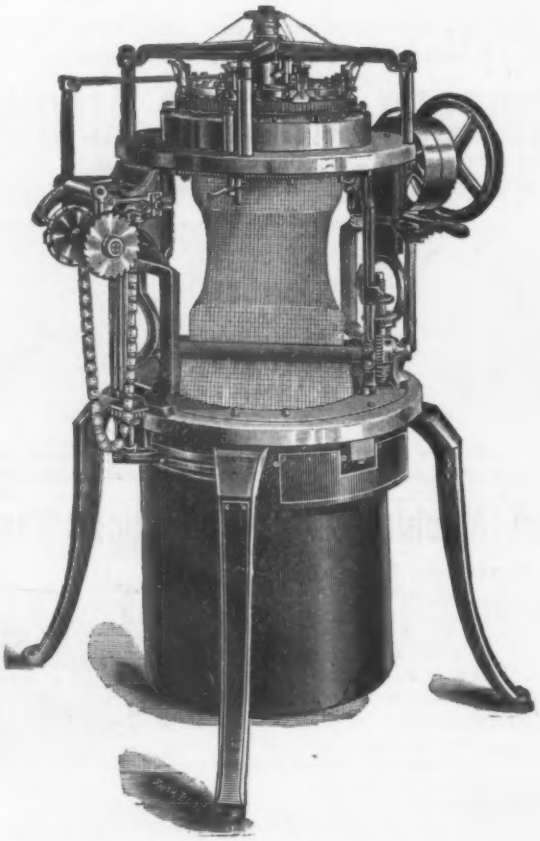
Wildman Manufacturing Co.

Norristown, Penn., U. S. A.

Manufacturers of

Circular Rib Knitting Machinery

Automatic
Stop
Motions



Electric
Cloth
Cutters

AUTOMATIC AND PLAIN

For all classes of Ribbed Hosiery, Underwear, Combination Suits, Sweaters, Etc.

Full Fashioned Hosiery Machines

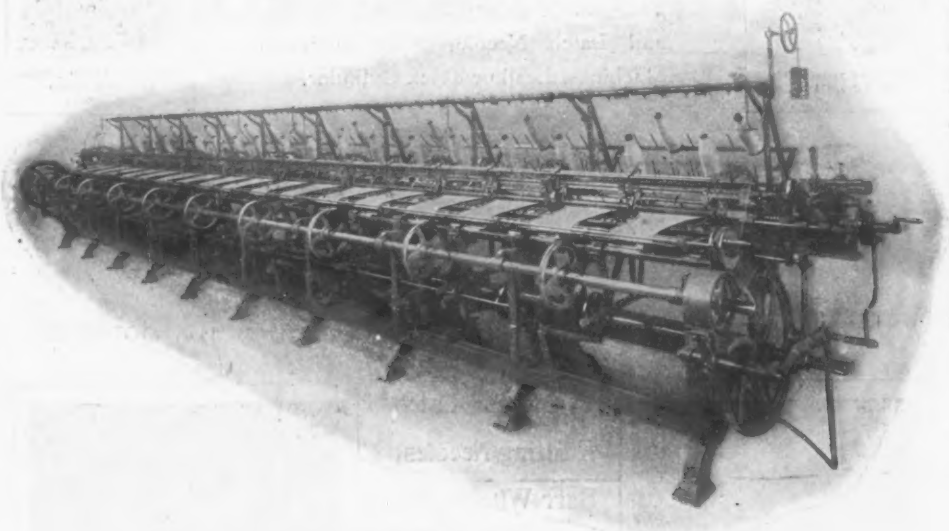
BUILT BY

SCHUBERT & SALZER

Largest Manufacturers of all classes of Hosiery Machines.

The plant, which is located in Chemnitz, Germany, declared by engineering experts and hosiery manufacturers to be the finest of its kind, is equipped with the most modern American and European machine tools, employing 1600 skilled workmen.

These machines have been proven the best constructed and most productive in the market for the manufacture of cotton, lisle and silk hosiery and since their introduction into this country 13 years ago have always been the leaders among a number of competitive makes, as upon trial they have fully borne out all that is claimed for them.



REFERENCES:

All the leading manufacturers of full fashioned hosiery in this country. Largest individual order for 65 eighteen section machines placed recently by the new million dollar concern, the Brown-Moore Hosiery Co. of Philadelphia.

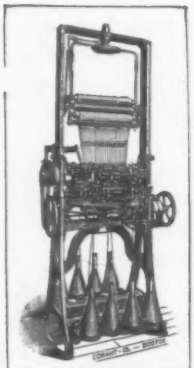
AMERICAN REPRESENTATIVE:

OTTO WALTHER, - 507 Bourse, - Philadelphia.

CHARLES COOPER

BENNINGTON, VERMONT.

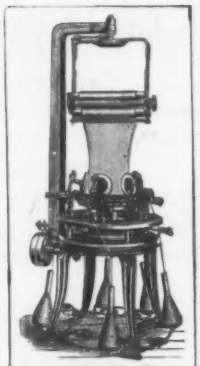
MANUFACTURER OF



Circular Spring Needle Rib Top Machine.

Knitting Machinery

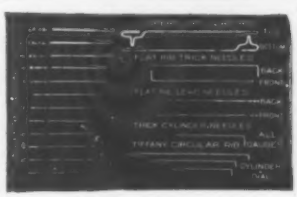
Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder.



Spring Needle Circular Plain Body Machine.

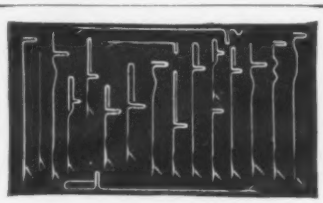
Spring Needle Cylinder Rib-Top Machines

For making Cuffs, Drawer Bottoms and Shirt Borders.



Spring Needles.

Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, Etc.



Latch Needles.

COLLARETTE ATTACHMENT.

AMERICAN REPRESENTATIVE.

G. H. ROGERS,
509 Clinton St., Hudson, N. Y.

EUROPEAN REPRESENTATIVE.

FELIX LEDERER.
Ix/4 Schubertgasse, Nr. 22, Vienna, Austria.

FRIEDBERGER-AARON MFG. CO.

Leading Manufacturers

Braids and Edgings

For Trimming

Ladies' Ribbed Underwear.

Having Installed More New Machinery and **Increased Our Facilities** in general, we are in better position than ever to sustain our **Established Reputation.**

Mills: Germantown, Philadelphia

P. O. Address, Logan Station, Philadelphia.

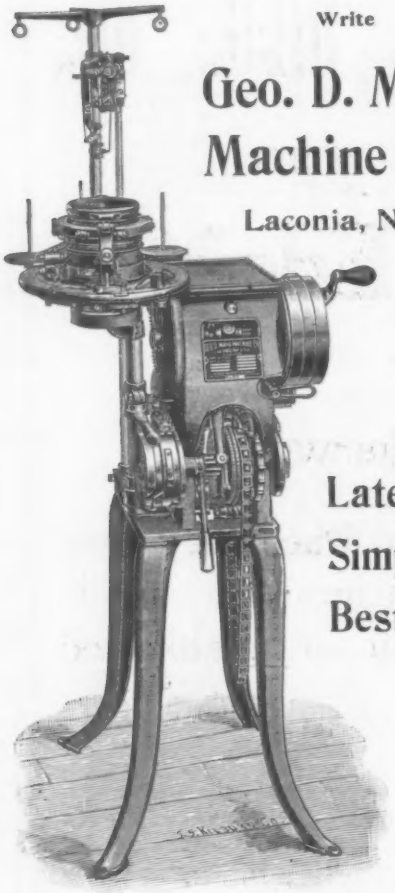
If You Want

Largest Production For Least Money

Write

Geo. D. Mayo Machine Co.,

Laconia, N. H.



Latest
Simplest
Best

MAYO'S

New Full Automatic Knitter

PHILADELPHIA OFFICE,
KNICKERBOCKER BLDG., COR. SIXTH AND ARCH STS.,
B. M. DENNEY, REPRESENTATIVE.

NYE & TREDICK CO.

Circular Rib Knitting MACHINERY

For making Ribbed Underwear, Combination Suits, Sweaters, Cuffs, Shirt Borders, Hosiery, etc. : ; :

Correct Construction. Excellence and Durability.

LATEST IMPROVEMENTS
QUALITY OF FABRICS AND PRODUCTION
UNEXCELLED

NYE & TREDICK CO.
606 Arch St., PHILADELPHIA, PA.

UNION SPECIAL
MACHINE COMPANY

HIGH SPEED ELASTIC STITCH SPECIAL SEWING MACHINES FOR MANUFACTURING PURPOSES

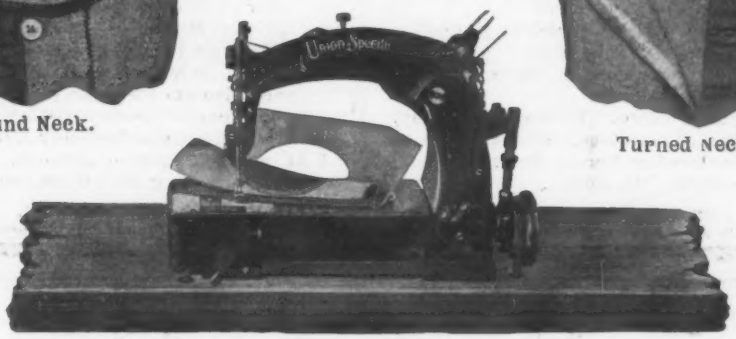
TRIPLE THE EFFICIENCY of YOUR OPERATORS.

Bound Neck.

(1) Cutting Out Neck Piece
(2) Stitching It to Back
(3) Ornamental Edge Covering
all in One Simple Operation.

Turned Neck.

Perfect Work.



High Speed.

STYLE 6900 G.

SPECIALLY DESIGNED FOR "NECKING" KNIT UNDERSHIRTS.

The one machine may be used to make either turned or bound necks.

(Both operations on this machine, patent applied for.)

Most Durable Sewing Mechanism Ever Constructed.

96 South St., Boston, Mass.
50 E. Main St., Amsterdam, N. Y.
51 Mohawk St., Cohoes, N. Y.
40 St. Antoine St., Montreal, Can.

MAIN OFFICE AND FACTORY
75 E. Kinzie Street, Chicago, Ill.
GENERAL EASTERN OFFICE
47 Leonard St., New York.

731 Arch St., Philadelphia, Pa.
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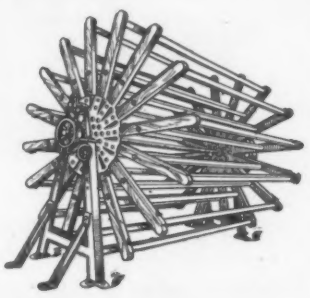
Leaves yarn in beautiful condition — Bailey's Cold Air Drying System

Yarn dried by this system is much softer, winds and weaves better, shows less percentage of waste and the colors develop better. In use in over two hundred mills. Simple, effective, inexpensive. Investigate its merits for your profits sake. Where great capacity is wanted my *hot air system* is unequalled.



Dye Sticks, Dry Poles, Fans, Trucks for Yarn Dryers and Dye Houses.

FRANK BAILEY, Manufacturer, Works at Braddock.
P. O. Ad., Cedar Brook, Camden Co., N. J.

JAMES TAYLOR, 121 Arch Street, Philadelphia Pa.

ALL KINDS OF NEW AND SECOND HAND **KNITTING MACHINERY**

A RARE OPPORTUNITY TO BUY.

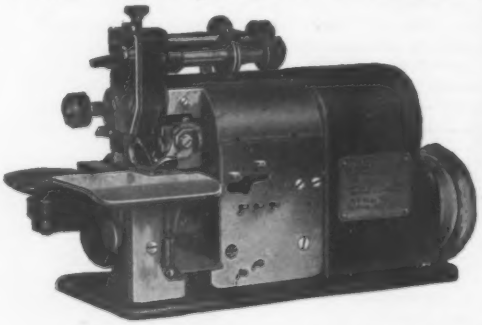
1 Bruce band folder and cutter.
38 Beattie & Hepworth & Abel loopers.
4 Hosiery presses (lever).
60 Lamb and Grosser sweater machines.
100 Ribbed underwear machines, various sizes.
50 Brinton & Co. ¼ aut. knitters, sizes.
30 Union Special machines, various styles.
1 Rotary fire pump.
100 feet woven rubber hose, 3 inches dia.
3 Toque machines.
100 Brooks welters.
250 Brinton & Co. and other make hosiery ribbers.
140-Ribbed shirt machine cylinders and dials, all sizes, cuts and makes.
2 Grosser Jacquard machines for gloves.
3 Cyclone dryers. (Hosiery.)
5 Band folding and cutting machines.
1 Centrifugal Pump.
1 Small Steam Pump. 1 Small Belt Pump.
2 Lamb border machines, auto. rack.
2 20 Plate Crawford Screw Press, 31x43.
2 Double Ribbed Machines.
5 Cop and Skein Winders.
1 Pownall Screw Press 34 x 52 in.
1 Cleveland 42″ Belt Driven Extractor.
5 Pair Platform Scales.
1 Singeing Machine.
1 Hosiery Printing Press.
1 Cornely Embroidery Machine.
30 Standard "B" 200 Needle Machines.
20 " B 188 " "
54 " B Machines for sizes.
24 Mayo "Acme" " " "
500 Dozen hosiery shaping boards.
1 Crane Style Collarette Machine 20 in. diameter 16 Needles.
1 Curtis & Marble Napper.
1 McCreary 60 inch Napper.
22 National Knitters, 3¾ in,. 216 needles.
10 Jones Fleecers for hosiery.
1 Evans Screw Press 2 post 30 x 36.
10 Latest Imp. Knit Neckwear Machines.
1 44 inch Belt Driven Extractor.
30 National Spring Needle Hosiery Machines.

WRITE FOR COMPLETE LIST. APPRAISEMENTS A SPECIALTY.
We are always in the market to buy good second-hand Knitting and Finishing Machinery.

The Merrow

FAST
DURABLE
Light Running

High Speed Overseaming, Overedging and Scallop Stitch Machines are



OUR NEW STYLE 60 MACHINE for Trimming and Overseaming in one Operation produces the strongest, best Seam and does it with the greatest economy.

USE STYLE 18 for Horse Blankets.
STYLE 17 or 22 for Bed Blankets.
STYLE 35 B SHELL, for Necks and Fronts of Rib Goods, produces the most showy, substantial finish.

Send for Catalogue and Samples.

THE MERROW MACHINE CO. HARTFORD, CONN.

Knickerbocker Building, Sixth and Arch Sts., Phila. Room 321, 467 Broadway, New York

EXCELSIOR KNITTING MACHINE MFG. CO.

Meadow and Washington Streets

ALLENTOWN, PENNA.

BUILDERS OF

Full Automatic Knitters

With or without **Transferring Device**

ALL SIZES AND GAUGES, 2 1-4 INCH TO 4 INCH

AN INSTRUMENT OF PRECISION!

"OVERLOCK" MACHINE

(Trade Mark) (Pat. April 5, 1892)

Patent twice upheld by U. S. Court of Appeals

Trade Mark

Business Established in 1859.

For TRIMMING, SEAMING (or Hemming or Overedging) and COVERING Raw Edges of Knit Underwear and Hosiery in ONE OPERATION at 3000 Perfect Stitches per Minute.

WILLCOX & GIBBS SEWING MACHINE CO.,

General Offices: 658 BROADWAY, cor. BOND STREET,

NEW YORK, N. Y.

LONDON PARIS MILAN DRESDEN BRUSSELS NOTTINGHAM

The Invincible

Full Automatic.

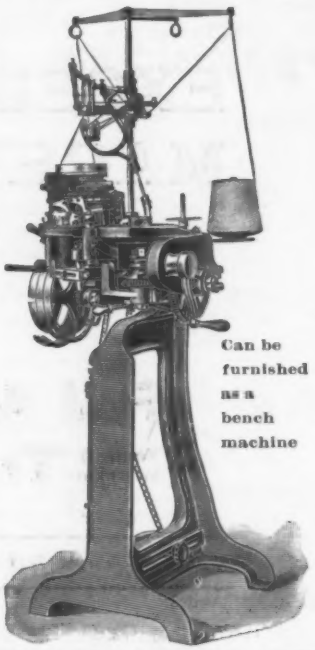
"The KNITTER that KNITS"

THE LARGEST PRODUCER OF PERFECT WORK.
SIMPLE, POSITIVE AND EASY TO OPERATE.

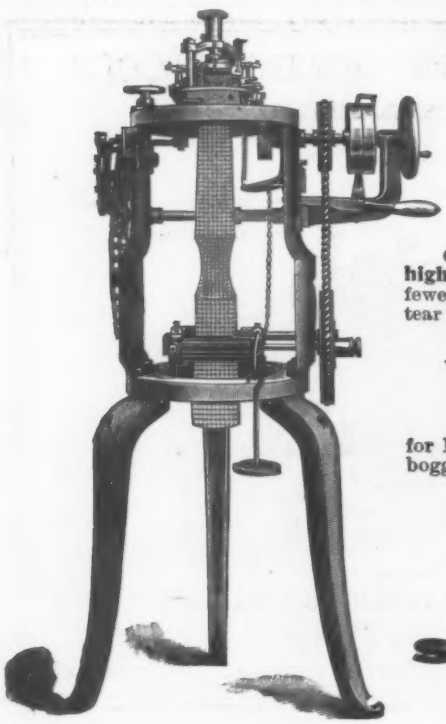
E. JENCKES MFG. CO.

Pawtucket, R. I.

PHILADELPHIA OFFICE,
101 North Sixth St.



Can be furnished as a bench machine



High Speed Rib Knitting Machinery.

Our latest model machinery has been designed to run at very high speed, giving large production. This is accomplished with fewer seconds, less breakage of needles, less jar and wear and tear on machines than has been customary at lower speeds.

We also make Special

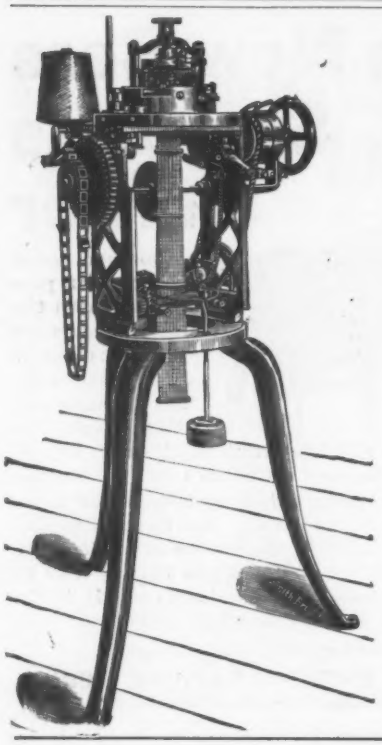
STRIPING AND DESIGNING MACHINES

for Fancy Golf Stockings, Bathing Suits, Sweaters, Toques, Toboggan Caps, Skirts, etc.

Our Machinery gives large production at low cost and enables manufacturers to meet the market always and make a profit.

STAFFORD & HOLT,

LITTLE FALLS, N. Y.



H. Brinton & Co.

213-215 Race Street, Philadelphia, Pa.

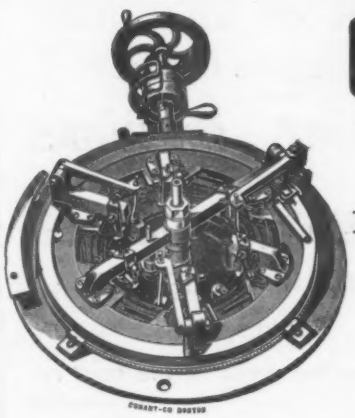
BUILDERS OF

Knitting Machinery

For HOSIERY and UNDERWEAR.

Complete Estimates Furnished. Send for Particulars.

The cut shows our **Improved Automatic Ribber** with Welt and Slack Course for Half Hose, Tops and Ribbed Legs.

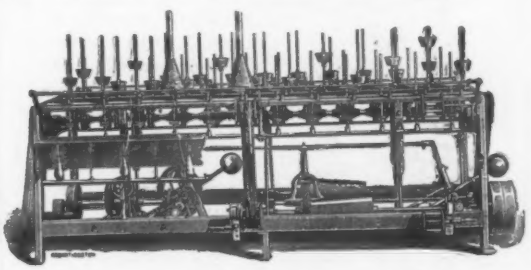


CIRCULAR KNITTING MACHINES

Either plain or full automatic, with stop motions complete. 4 to 24 feeds for

RIBBED UNDERWEAR

Automatic Racking and Striping Machines for Sweaters, Cardigans, Collarettes, Cuffs and Anklets.



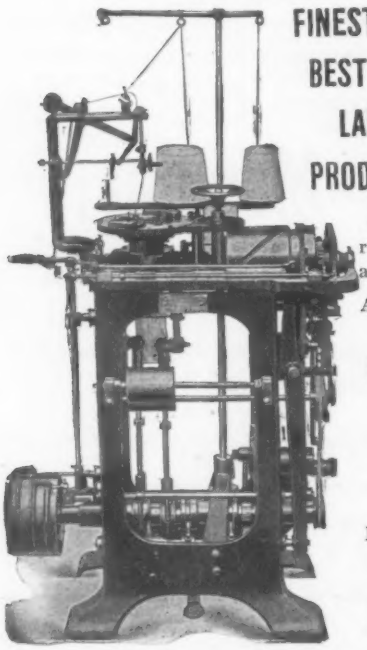
ALSO BUILDERS OF THE WELL-KNOWN

ABEL WINDERS, SEAMERS and LOOPERS.

LEIGHTON MACHINE CO., - Manchester, N. H.

"NATIONAL"

Stands for



FINEST GAUGES
BEST FABRIC
LARGEST
PRODUCT ON

Greatest Variety of Laces and Novelties.

Allautomatic.

Lowest Cost for Operating

Also

Rib Knitting Machinery, Overedge, Crochet and Shell Stitch.

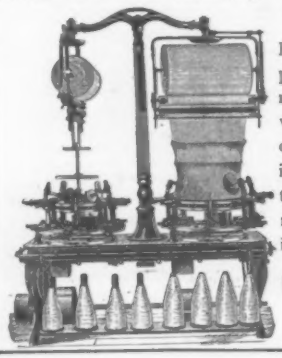
NATIONAL AUTOMATIC KNITTER CO.

728 Cherry Street, PHILADELPHIA, PA.

We are the Oldest Manufacturers

of this Design of Spring Needle Knitting Machine in this Country

40 years' experience



Do not be misled by people who became manufacturers in 1903 without any previous experience who are trying to represent that they are the oldest manufacturers. Investigate.

Robt. W. Gormly & Co.

Troy, N. Y.

The New Boss Seamless Knitter

Do you want the biggest production with the least menders, for the least money? If so, write to the Boss Knitting Machine Works for their circular with full directions. There is no cylinder to be handled. We use only one cylinder and transfer device for half hose or ladies' hose. This machine beats them all. Has no equal for simplicity and durability. Makes 300 revolutions per minute. Built in sizes from 2¼ to 5½; from 40 to 224 needles. Automatic in heel and toe. It is the strongest built knitter on earth.

Send for prices and particulars.

THE BOSS KNITTING MACHINE WORKS,
Cor. Elm and Reed Sts., Reading, Pa.

"Acme" and "Hemphill"

SEAMLESS HOSIERY

Knitting Machines

built by

Mayo Knitting Machine & Needle Company

Franklin, N. H.

Answer all purposes in the *most reliable*, *up-to-date*, and *economical* manner. Write us for full particulars.

Manufacturers like our Latch Needles

because we make a superior grade of needles.

Philadelphia Office, Knickerbocker Bldg.

STANDARD MACHINES FOR HOSIERY MAKING.

The STANDARD F, with attachments, can make any and all of these fabrics:

PLAIN GOODS
PLAITED WORK
THREE COLOR STRIPES
TIPPED HEEL AND TOE
WHITE FOOT
CHANGED HEEL AND TOE
CARTER TOP
LOOPERS SLACK COURSE

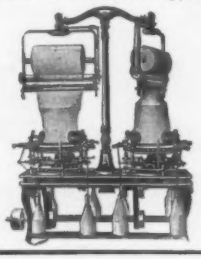
Most Stockings--Best Fabrics--Longest Life

STANDARD MACHINE COMPANY,
OFFICE AND SHOW ROOMS
510 Ludlow St. Philadelphia

We Are the Oldest Manufacturers
IN THE WESTERN HEMISPHERE
Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:
Cross Question 123. How long have you been a manufacturer of knitting machines? Answer. I started in this business about the middle of May, 1900.

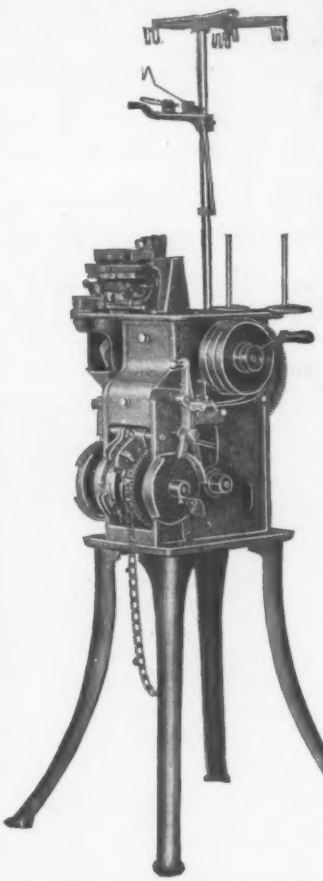


Tompkins Knitter

This design was adopted in 1875.
BUSINESS ESTABLISHED in 1846, before ROBERT W. GORMLY Was born, according to his testimony in the case above cited.

"THE BANNER"
Hemphill's Latest

A FULL AUTOMATIC MACHINE
Specially adapted to



Plaited Goods
and
String Work
also
High Splice
and
Double Sole

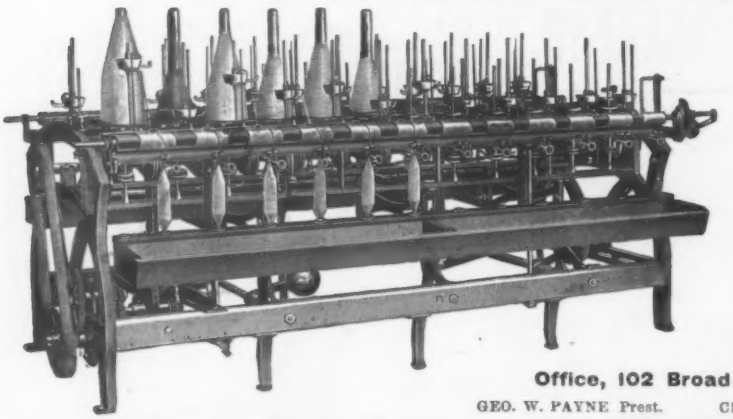
Largest Production
More Yarn Changes
Highest Speed
Simplest
Least Repairs

Produces a Superior Quality of Work.

MANUFACTURED BY THE
Hemphill Mfg. Co.
131 Clay Street, PAWTUCKET, R. I.

OVER 1,900 PAYNE WINDERS IN USE

By Hosiery Manufacturers,
Wind for Cop, Skein or Bobbin.



Improved

Upright Spoolers,

To Spool from Cop, Skein or Bobbin.

Doubling Spoolers for doubling 2, 3, or more ends into one.

Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers, Warp, Spool, Spooler, Guides, Bolsters and Stops Made and Repaired at Short Notice.

GEO. W. PAYNE CO.,

[Est. 1865. Inc. 1903.]

Office, 102 Broad Street, Pawtucket, R. I.

GEO. W. PAYNE Prest. CLINTON F. PAYNE, Sec'y. and Treas.

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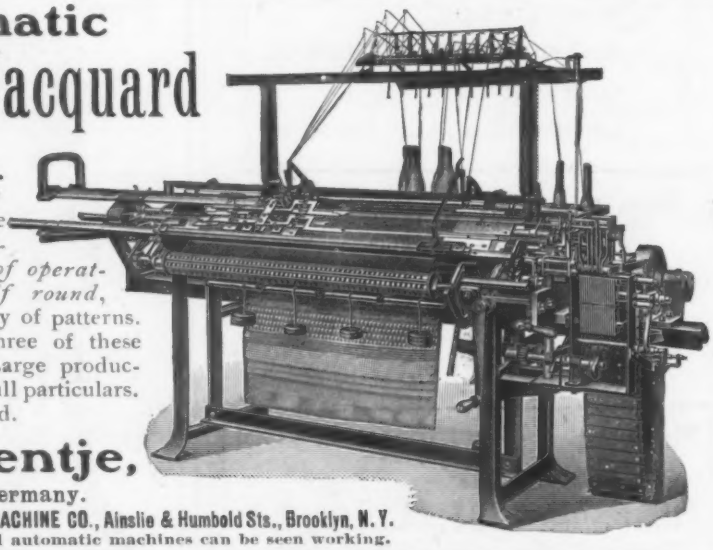

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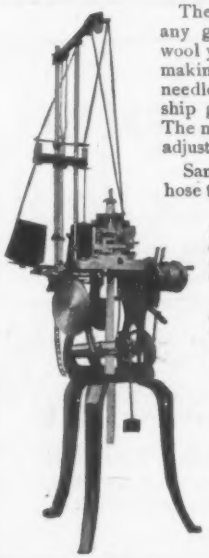

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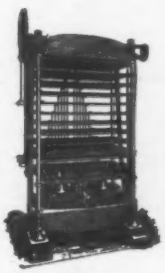

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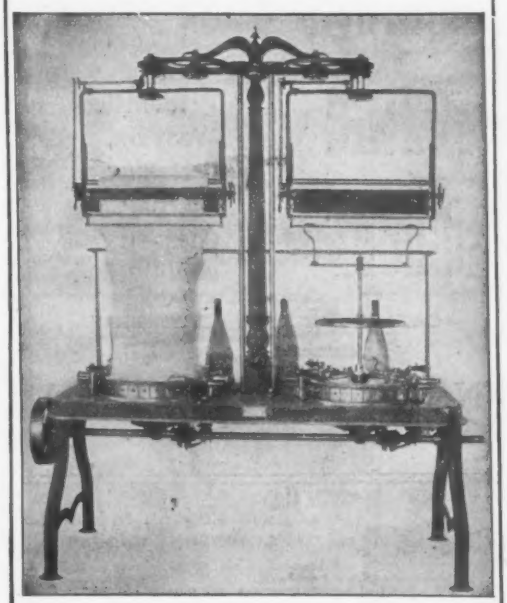

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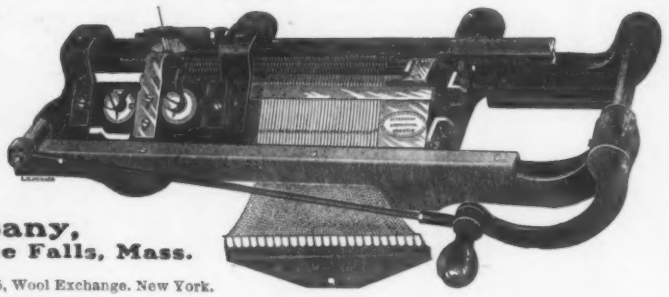

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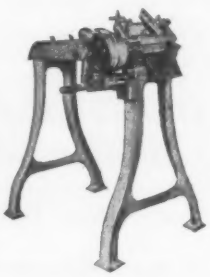

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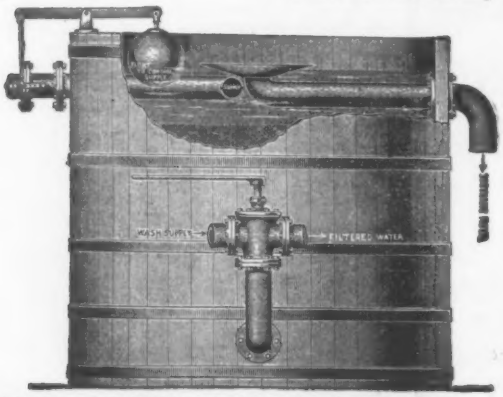

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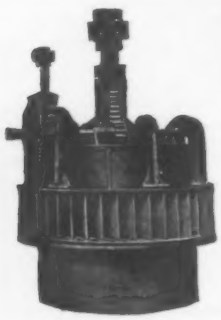

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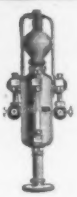

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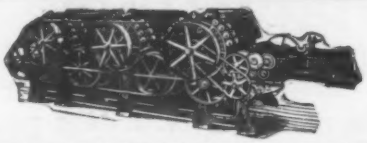

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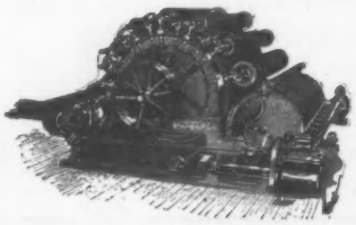

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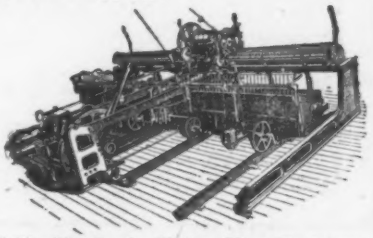

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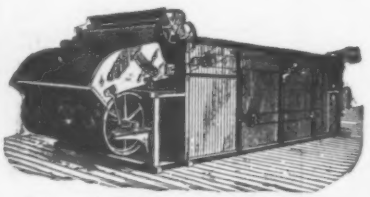

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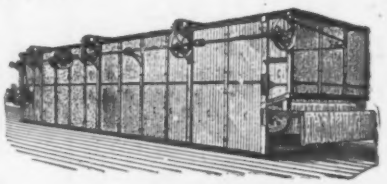

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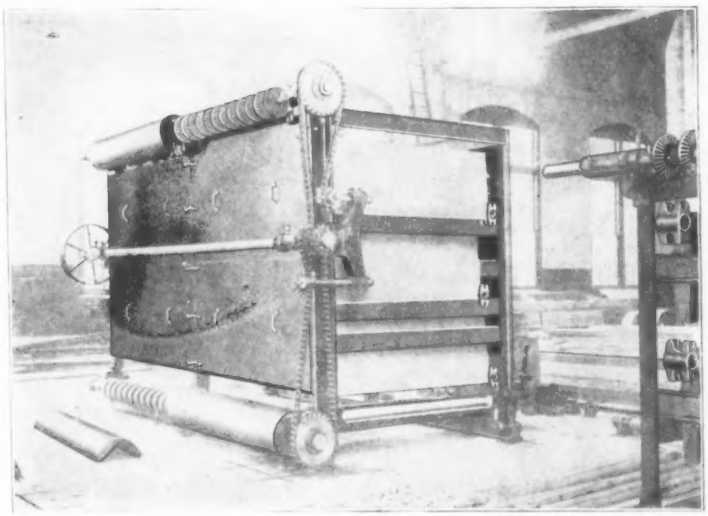

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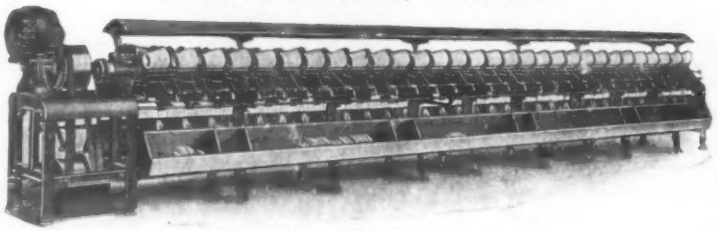

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